RAILROAD GAZETTE

FRIDAY, OCTOBER 27.

Contributions.

An Express Passenger Engine of 30 Years Ago.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The various modifications of locomotive construction which have been recently produced, in answer to the demands for high speed passenger service, include, among some few novelties, not all of which are meritorious, the renewed employment of old features, which by reason of the comparative imperfection of manufacturing facilities, and of road-bed and superstructure, at the time of their original application, have heretofore been exceptional in American practice. Large driving wheels of wrought iron and solid-ended side rods are within this category. The latter, it may be remarked in passing, were introduced about 1840, either by Ross Winans or Thatcher Perkins, the latter of whom once said to the writer that the object of their construction was to counteract the tendency of the average engineman of those days "to hit the first key he came to."

The engines "Illinois" and "Michigan" were built in the Reading shops of the Philadelphia & Reading Railroad, from the designs of Mr. James Milholland, then Master of Machinery of that road, in 1852, and the old-fashioned lithograph of the former (from which the engraving was made) which I send you, will doubtless recall to the recollection of many of your readers an engine which, in the earlier days of their mechanical career, they viewed with surprise and admiration. These engines are briefly referred to by Colburn in his several treatises, and as examples of the early use of wrought-iron coupled driving wheels of large diameter, deserve a place in the record of advancing steps in American locomotive construction.

The dimensions of the "Illinois" and "Michigan" were as follows:

Cylinders	17×30 in.
Diameter of driving wheels	7 ft.
" " truck "	30 in.
" " boiler	50 in.
Grate surface	17 sq. ft.
Exhaust orifice	Variable from 3 in. to 3¾ in.
Weight ready for service	62,000 lbs.

The average pressure of steam carried was 100 lbs., and on the round trip from Philadelphia to Pottsville and return (186 miles with train and 12 miles without), the consumption of anthracite coal was about 4 tons. The run of 93 miles was made in 4 hours, including 24 stops, to do which required fair speed between stations.

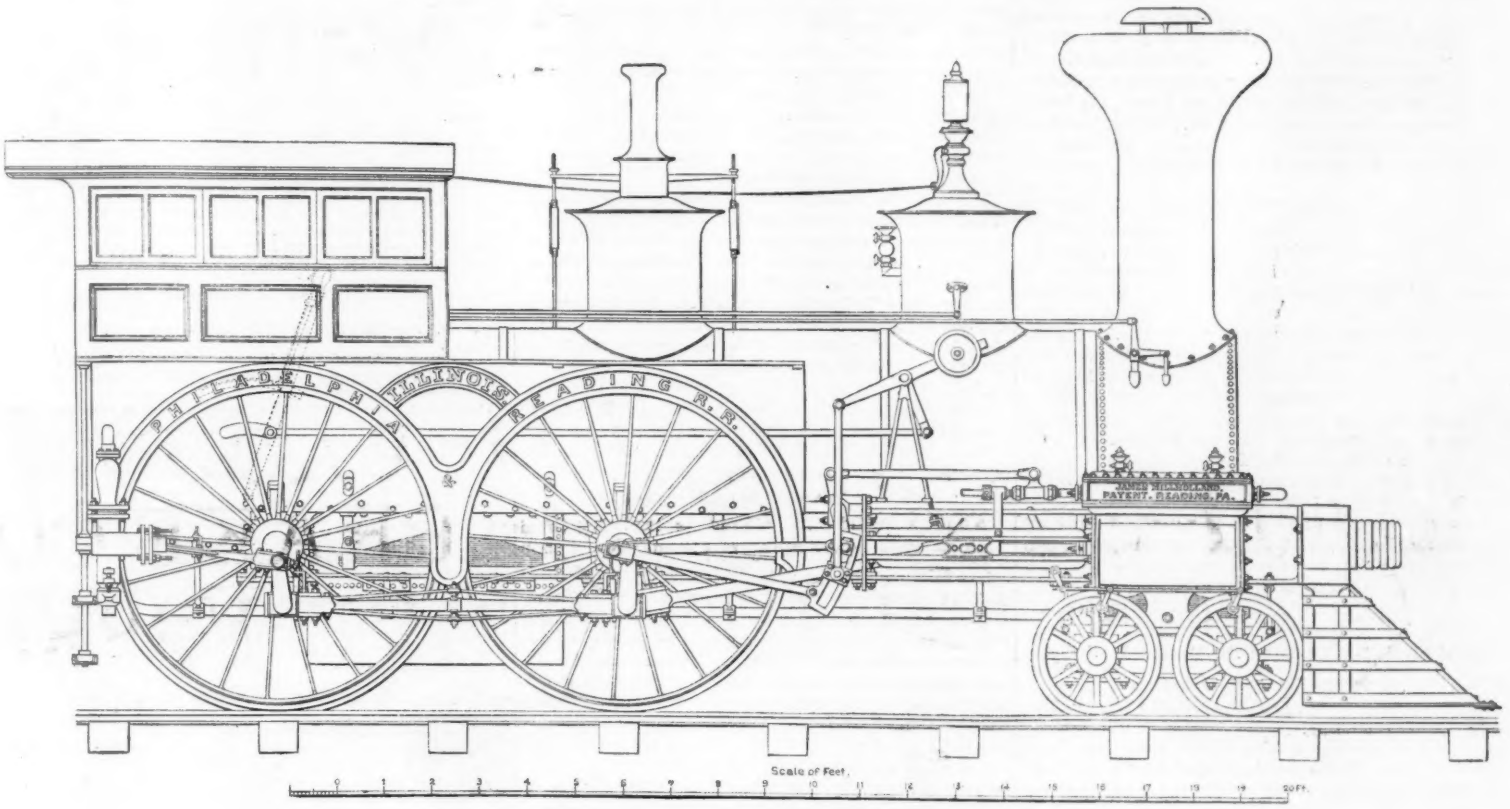
These engines were probably the first passenger locomotives built in this country to use anthracite as fuel. Their boilers were constructed in accordance with Mr. Milholland's patent of Feb. 17, 1852, the special features of which were the use of dust-plates, contracting the area of grate and designed to prevent overheating the sides of the fire-box, and an intermediate or mixing chamber, into which the products of combustion passed from the fire-box between water tables or vertical water spaces, and from which, after mixing with cold air admitted through small holes, they passed through the tubes to the smoke box and stack. Sectional views of the boiler will be found in the *Journal* of the Franklin Institute, for April, 1853, Vol. 52, Third Series, p. 271.

The 7-ft. driving wheels, which, it will be noticed, were of light and elegant design and proportions, were forged and finished at the Reading shops, and the welds were all made under compression, and not by impact of hammer and sledge. They were, I think, the first forged wrought-iron driving wheels made in the United States, and, so far as I can learn, no others of equal size have since been constructed or used here, certainly none that have performed equal service.

Among the peculiarities of these engines may the noted the short stroke pumps, worked by return cranks on the back crank pins, a feature which has been adopted up to the present time by other constructors; the trussed connecting rods, and the outside link motion. Although capable of developing high speed, their capabilities in that direction were not fully availed of for the reason that the requisite degree of solidity of road-bed and rigidity of rail-joint had not in their day been reached, as under the improved methods now employed. Therefore to "let her out," as the boys would say, except upon long tangents, was not as entirely practicable as it would have been a quarter of a century later. The engines, nevertheless, did good work and fulfilled their mission, going to their bourne honorably after a well-spent life of 16 years.

I enclose statement of performances of engine "Illinois" in 1852 and 1856, handed me by Mr. Wootten from records preserved at Reading.

J. SNOWDEN BELL.



EXPRESS PASSENGER LOCOMOTIVE.

Built in the Shops of the PHILADELPHIA & READING RAILROAD, *at Reading, Pa., in* 1852.

From designs by JAMES MILLHOLLAND, *then Master of Machinery.*

TRIALS OF PASSENGER ENGINE "ILLINOIS."

TRIP.	Time.	Cars.	Wt. of train and engine, tons.	Miles.	FUEL.		WATER.		Lbs. water per lb. coal.	Lbs. coal per mile.	Date of test.
					Wood, cu. ft.	Coal. lbs.	Galls.	Lbs.			
	H. M.										
Pottsville to Philadelphia	4:09	5	118	98	45.0	4,325	3,200.0	26,656	6.16	45.50	Nov. 19, 1852.
Philadelphia to Pottsville	4:28	5	118	98	45.0	5,000	3,700.0	30,821	6.16	52.60	Nov. 18, 1852.
Pottsville to Philadelphia	4:35	5 to Reading, 6 to Phila.	127	93	31.2,	4,175	3,196.0	26,622	6.37	44.88	July 15, 1856.
Philadelphia to Pottsville	4:27	6	132	93	29.1	5,079	3,600.6	29,992	5.90	54.59	July 7, 1856.
Pottsville to Philadelphia	4:35	5 to Reading, 7 to Phila.	135	93	30.1	3,896	2,909.7	24,237	6.21	41.88	July 17, 1856.
Philadelphia to Pottsville	4:27	6 to Reading, 5 to Potts.	127	93	29.2	4,308	3,339.0	27,813	6.45	46.32	July 4, 1856.

A Dangerous Railroad Grade Crossing.

TO THE EDITOR OF THE RAILROAD GAZETTE:

I read with interest your remarks upon the crowded condition of the Elizabeth grade crossing, where over 400 trains pass in the twenty-four hours, the greater part of them within ten hours. I have frequent occasion to study that crossing while waiting, and being familiar with the lay of the land, have concluded that the remedy you propose is in the right direction, but not the best solution of the difficulty. The present approach to the crossing from the south is on a succession of reverse curves, which it would now be expensive to straighten. Many of the express trains of both roads run through Elizabeth and over this crossing at a speed of over 20 miles an hour, experience having demonstrated, no doubt, that this speed is practically safer than the six-mile rate of the statutes, as the slower speed is only a temptation to impetuous passengers and boys to jump on. Very many of the freight and coal trains are so heavy that they are stalled in approaching the crossing on these curves; and as they are obliged to approach it from both directions cautiously, momentum is lost, and the transit made so tedious as to cause a block of both railroad and street traffic. Several of these fast trains are due at about the same minute of time.

Inasmuch as there is reason to believe that a largely increased through business from the Reading and the Baltimore & Ohio roads, to both Harrisburg and Pittsburgh, as well as Washington and the Southwest, is likely to be thrown upon the Jersey Central (to say nothing of the Lehigh Valley's Buffalo line), it is obvious that both roads will be tempted to run fast trains across, and otherwise endanger this already overcrowded crossing. Neither company is willing to elevate or depress its track at this place, nor would it altogether answer. The remedy lies in another direction. The simplest, because the most thorough and least expensive, way out of the difficulty, is for the Pennsylvania Company to construct a loop line, for through purposes, around Elizabeth entirely. This would not lengthen the line appreciably and could improve its grades and curves. A divergence at or near Linden station, skirting the city boundary to a point near Waverly (with a station at the Morris avenue crossing, if expedient), would enable all through trains, passenger and freight, to continue by low grades and nearly straight lines, and result in a saving of time and power, and doing away with this risk. The crossing of the Central New Jersey road would be made overhead, or probably underneath, at a point a mile west of the

present crossing in the heart of the city. I estimate the track could be graded and superstructure laid down for $50,000 per mile, and the right of way procured for an equal sum. A single accident, as things now run, might easily cost the company half that amount. That company especially cannot afford to continue to allow this crossing to remain as it has been. R. T. C.

The Late Mr. Laird, and the Design for the American Locomotive.

TO THE EDITOR OF THE RAILROAD GAZETTE:

In an article published in the *Railroad Gazette* of the 15th September, announcing the death of John P. Laird, I find a statement that a "prominent locomotive-builder of to-day" said to the writer of the article that the third locomotive turned out of the shops of A. Latham & Co., at White River Junction, under the superintendence of Mr. Laird, was the first locomotive ever built with outside level cylinders and spread truck—the locomotive now universally known as the "American locomotive." I must say that the prominent locomotive-builder referred to could not have been well informed. I commenced the building of locomotives early in 1852, but as I had to make drawings and an entire set of patterns, even to the truck wheels, I did not turn out my first engine until 1853, and it had outside level cylinders and spread truck, and I never built one otherwise. It also had a round smoke arch with the cylinders attached to it through the medium of a cast-iron bed-plate or saddle, which was a new arrangement. The present style of main frames, with cast-iron housings or casings to the pedestals, also the plate iron yoke connecting the frames, the boiler, the slide bars, rocker boxes, pumps, etc., all self-contained and solid in one piece, which contributes to the simplicity and solidity of the present American locomotive, were also first used by me.

Mr. Laird engaged at the White River shops in 1853. It seems that the works were about to commence the building of locomotives, and probably did not turn out their third engine in less than two years from the time he commenced service. I think if Mr. Laird were alive now he would tell you that he saw some of my make of locomotives, or knew all about them, before he built the "Gladiator." My departure from the ordinary methods of construction was quite notorious, and master mechanics generally knew all about it, and some of them ridiculed it. Master mechanics were not so numerous then as now. I never considered my arrangements as inventions, but merely applications of a little common sense. Still, had I procured a patent for the cast-iron casings to the pedestals, it would have been quite valuable. At the time I commenced to think about building locomotives, an engine with outside cylinders was considered very inferior to insiders, but I noticed that builders generally adopted my style very soon after I turned out my first engines—some of them quite as soon as Mr. Laird.

WM. MASON.

Comfortable Car Seats on the Boston & Albany.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The grave public necessity which has been felt for so long a time for different methods and forms of constructing chairs for drawing-room cars has at last been seriously considered, as a tangible evidence in proof of this is shown by the production of a chair made of rattan, combining all the essential qualities of beauty and comfort, on the Boston & Albany Railroad, in car No. 209, recently completed at the shops at Allston, Mass., and to sit in one of them is a positive relief. The car is the same in construction and appointments as No. 207, described in the *Railroad Gazette* of July 7, and was put in service last month. The Master Car-Builder, Mr. F. D. Adams, has devoted his personal attention to the manufacture of these chairs, and has insisted upon having them made in form to suit the shape of the most corpulent man, the most attenuated woman, or the smallest boy. Although perhaps not arriving at that perfection which will suit every shape, shade or grade of opinion, the improvement still is gratifying.

The chairs for winter use are now being constructed by the company; special attention is being given to the form, as in the case of the rattan chairs, and more perfect results are likely to be reached in consequence of the yielding qualities of the springs and the upholstery, which are of the best qualities.

The covering is to be of the finest old-gold silk plush, which gives a warm and inviting appearance, suited for the season for which they are intended.

The public will certainly be gratified at the results obtained from this endeavor to secure their comfort.

Uniformity and Economy.

TO THE EDITOR OF THE RAILROAD GAZETTE:

For years we have all admitted that the construction of our freight cars as a whole is very far from what is desired and very expensive to maintain, in consequence of a lack of uniformity and proper attention to a more perfect adjustment, and that it is within the reach of possibilities greatly to improve the methods; but we are to-day practically just where we were when we first admitted the fact. Now, why, if this be true, has not something been done to meet the demands? The reasons are plain. There has been no organized plan by the managers to secure uniformity of parts or to perfect the construction. We must, however, admit, although we do not wish to modify the statement made above, that there has been a great improvement in the construction of freight car trucks over those in use a few years ago. This does not, however, reach the object for which we are aiming; but if the best features found in three or four of the most approved, were combined in a uniform truck, a great advantage would be gained and the difficulty, delay, and the expense of getting special parts, perhaps a thousand miles away, to supply breakage would be entirely overcome.

The draw-bar rigging of our freight cars is a forcible illustration of this statement. The present form of construction is allowed by all to be sadly deficient in the qualities of economy and safety, the expense attending the link and pin being simply enormous. Now, here is a serious difficulty to be overcome, not so much in the accomplishment of mechanical construction as in the wide difference of opinion to be harmonized. But no draw-bar rigging that is operated with its own kind, with link and pin, is to be thought of as a possible thing to be considered for adoption if economy and safety is to have weight in this matter.

I believe that from the knowledge already possessed by the thinking mechanics of the country a freight car can be constructed that will bring about astonishing results and obviate all the difficulties now existing (danger, delays for renewal of broken parts, loss of links and pins and consequent expense, etc., etc.), but before a serious thought is entertained in this direction it will be necessary to have the consent and approval of several of the leading trunk line managers to make the plan of any real use. If several of these managers had called their master car-builders together two or three years ago, within which time immense numbers of cars have been built, to consult with them in reference to a uniform freight car, and had instructed them to arrange for the adoption of such a car, subject to their approval, and such plan had been carried out, the result, without a reasonable doubt, would have been very gratifying to-day, and railroad managers would be the richer and consequently the happier for the change accomplished.

It is made, then, clearly obvious that the movement in this direction must come from the managers, and with a well-directed purpose nothing prevents wonderful accomplishments. As has been intimated, a knowledge of the requirements and the means by which they can be reached are now within the bounds of possibility. The first cost of construction may be a trifle more than with the present style, but when the expense of maintenance is considered this will hardly be worth mentioning.

I believe what is already claimed to be possible can be accomplished by the use of the Jarnney Coupler or Miller hook so modified as to meet the exact requirements.

We only need to bring to mind the adoption of this improvement on our passenger equipment to satisfy ourselves of the immense saving resulting from its use there. The advantage in its use on freight cars is beyond a question very important, and would result in a large saving both of life and property, and almost entirely if not entirely prevent injury to those operating trains. It is time to do something besides to seriously entertain this question. A new departure must be taken in the plans and methods of construction of freight cars, if any permanent results in the way of improvement and consequent reduction in the expense of maintaining them in service is to be hoped for, and no plan should be contemplated that does not comprise the whole subject of a uniform car throughout, trucks and body, so far as castings and other special parts liable to frequent renewal are concerned, to make the plan of any permanent value. This does not necessarily prevent the construction of cars of different sizes to accommodate the local demands of various sections of the country or the construction of special cars for local business.

For the past few years I have given my special attention to the question of economy in the form and kind of material used and the method of construction of the various wearing parts of car equipment, and more especially the trucks of passenger cars, and have kept careful records to determine the advantage to be obtained by the use of the different kinds, and the result has been the production of some very interesting facts.

I make this statement below more particularly to show the advantage of proper and careful attention to construction rather than to indicate the importance of uniformity, for passenger car equipment has reached more nearly that point, and is not subject so generally to the necessity of having this system enforced, although in this case, and wherever through lines are maintained, uniform parts, subject to continual renewal, have been adopted to great advantage in cost of maintaining the cars in service.

In an article published in your issue of May 5, 1882, figures are shown which result in giving the average cost per car per mile of maintaining drawing-room and sleeping cars in service as to ordinary repairs, as follows:

"Average cost per car per mile. $0.00565."

I have, for the purpose of comparison, drawn from our records the cost of maintaining in service for one year a different line of drawing-room and sleeping cars, differently constructed as to trucks and wearing parts, and the record leads to results as follows:

No. of car.	Miles run.	Cost of repairs.
1	69,268	$200.57
2	65,758	210.90
3	58,739	215.09
4	58,734	260.10
5	36,036	152.74
6	32,531	162.75
7	21,114	156.57
8	54,756	180.95
9	81,256	234.70
10	51,246	160.92
Total	529,438	$1,935.29

Average miles run per car for the year, 52,943.

Average cost of repairs per car for the year, $193.52.

Average cost per car per mile, $0.00365.

It will be noticed that there is a saving of 35 per cent. in cost of maintaining in service the cars mentioned in this statement over those named in your issue of May 5. Those familiar with these matters will readily understand that, in a very large degree, this difference is owing to the quality of the work, form and kind of material used, and the manner of construction. It is clearly evident that much can be accomplished in the way of economy by keeping exact records to determine results. ADVANCEMENT.

Train Accidents in September.

The following accidents are included in our record for the month of September:

REAR COLLISIONS.

On the afternoon of the 1st a repair train on the Intercolonial road backed into a freight train in the yard at Weldford, N. B. The caboose was wrecked and a laborer killed.

On the morning of the 2d a coal train on the Pittsburgh Southern road ran into the rear of a passenger train near Pittsburgh, Pa. The engine and several cars were damaged and five persons slightly hurt.

On the night of the 2d a passenger train on the St. Louis, Iron Mountain & Southern road ran over a misplaced switch and into another freight standing on a siding at Tuckerman, Ark. Both engines were damaged and an engineer killed.

On the night of the 2d a freight train on the Wabash, St. Louis & Pacific ran into the rear of a preceding freight near Maysville, Ill., wrecking several cars and injuring two trainmen.

On the morning of the 4th a freight train on the Southern Central road ran into a preceding freight which had stopped near Smithboro, N. Y., wrecking seven cars.

On the evening of the 4th a passenger train on the Union Pacific road ran into a freight train which was just going into a siding at Washakie, Wy., damaging an engine and one car.

On the night of the 4th a freight train on the Wabash, St. Louis & Pacific road broke in two near Ritchie, Ill., and the rear section ran into the forward one, wrecking several cars and killing a brakeman.

Near midnight on the 4th a freight train on the Pennsylvania Railroad ran into a preceding freight which had broken in two in Harrisburg, Pa. The detached cars were driven forward into the forward part of the first train, and 27 cars were piled up in a bad wreck. Two trainmen were hurt.

On the afternoon of the 5th a passenger train on the Boston & Albany road ran into a dump car which had been in some way run out of a siding at Natick, Mass., doing slight damage.

On the morning of the 6th a freight train on the Baltimore & Ohio road ran into the rear of a local freight which had stopped at Marriottsville, Md., wrecking three cars.

On the afternoon of the 6th a passenger train on the Central Railroad of New Jersey ran into a shifting engine in the yard in Phillipsburg, N. J., and was slighly damaged. The shock opened the throttle of the shifting engine, whose crew had jumped off, and it ran across the yard at great speed and into some cars, wrecking several of them.

On the afternoon of the 6th a freight train on the Delaware, Lackawanna & Western road ran into a shifting engine at Delaware, N. J. Both engines and several cars were wrecked and a brakeman killed.

On the morning of the 9th a passenger train on the Connollton Valley road ran into the rear of a freight at Twinsburg, O., damaging several cars.

On the night of the 11th a freight train on the Chicago, Milwaukee & St. Paul road ran into another freight which was just going into a siding at Dakota, Minn., wrecking several cars.

On the morning of the 14th a passenger train on the Kentucky Central road ran over a misplaced switch and into a freight train on a siding near Paris, Ky., damaging the engine and several cars.

On the morning of the 14th a freight train on the Boston, Hoosac Tunnel & Western road ran into the rear of a passenger train which had broken in two near Hoosick Falls, N. Y. One car was wrecked and five persons slightly hurt. The freight train was following the other so closely that there was no time to stop it.

On the morning of the 15th a freight train on the Lake Shore & Michigan Southern road ran into the rear of a preceding freight near Berea, O., wrecking several cars.

On the morning of the 15th a coal train on the New York, Lake Erie & Western road broke in two near Warsaw, N. Y., and the rear section ran into the forward one, wrecking several cars.

On the night of the 16th a freight train on the Missouri Pacific road ran into the rear of a preceding freight in a tunnel near Kirkwood, Mo., wrecking several cars. The wreck caught fire and was destroyed. The wreck being in the tunnel made it impossible to reach it until the fire had burned out, and the road was blocked nearly two days.

On the morning of the 17th a freight train on the Fitchburg road ran into a preceding freight at Buckland, Mass., wrecking several cars.

A few minutes afterward another freight came up and ran into the second, wrecking four cars. The fireman was hurt.

Very early on the morning of the 18th the engine of a freight train on the Boston & Albany road became disabled as it was going out of West Springfield, Mass., and the train ran back down the heavy grade and into another freight standing on the main track, wrecking several cars.

About noon on the 18th a freight train on the Wabash, St. Louis & Pacific road struck a shifting engine which was standing on the main track in Wabash, Ind. Both engines and five cars were damaged.

On the evening of the 18th a passenger train on the Louisville, Cincinnati & Lexington road ran into the rear of a freight train near Shelbyville, Ky., wrecking several cars and injuring a brakeman badly.

Very early on the morning of the 19th a freight train on the Missouri Pacific road ran into some cars which had been blown by a high wind out of a siding at Tipton, Mo., upon the main track. The engine and several cars were wrecked.

On the morning of the 19th a freight train on the Chicago, Milwaukee & St. Paul road ran into the rear of a preceding stock train which had stopped at Lost Nation, Ia., wrecking 12 cars. A number of cattle were killed and a lot more turned loose on the prairie.

On the morning of the 19th a passenger train on the Pennsylvania Railroad ran into the rear of a freight train at Collins, Pa., wrecking several cars.

On the night of the 19th a freight train on the Wabash, St. Louis & Pacific road ran into a preceding freight which had stopped near Lagro, Ind., wrecking the engine and several cars. The first train had no flag out.

Very early on the morning of the 20th a freight train on the New York & New England road ran into the rear of a freight at Goshen, Conn., wrecking several cars.

On the afternoon of the 20th a freight train on the St. Paul, Minneapolis & Manitoba road ran into a preceding

freight near Atwater, Minn., wrecking several cars. Two trainmen were killed. The first train had a signal out, but it was not seen in time.

On the night of the 20th a freight train on the Pennsylvania Railroad ran into a preceding freight at East Rahway, N. J., damaging several cars.

On the 21st a freight train on the Memphis & Charleston road ran into a preceding freight near Stevenson, Ala., wrecking several cars, and killing a brakeman.

On the morning of the 22d a through freight train on the Boston & Albany road ran into the rear of a local freight, which had stopped at Brookfield, Mass., wrecking several cars. The local had a signal out, but the other failed to see it.

On the morning of the 22d a freight train on the Indianapolis & St. Louis road ran into some cars which had broken loose from a preceding freight near Greenville, Ill., wrecking the caboose.

On the morning of the 22d a New York, New Haven & Hartford local passenger train running over the New York Central & Hudson River road, which had, with other trains, been forced to take the track through the side tunnel on Fourth avenue in New York, on account of the derailment of a passenger train in the main tunnel, was stopped at Eighty-sixth street by a signal and by torpedoes on the track. A few minutes afterwards a Harlem rapid transit train came up at considerable speed and ran into the rear of the New Haven train, the Harlem locomotive running completely through the rear car and making it a complete wreck. Two passengers were killed, three fatally hurt, two trainmen and eleven passengers less severely injured. The train had been much delayed owing to the confusion resulting from the block of the main track, and a number of persons had left the car at the station above and gone to the Elevated road, or the loss of life would probably have been greater. An investigation was made by a coroner's jury, by which the accident was attributed to the defective system of signals, and to the neglect of an operator at the station above.

On the morning of the 22d a freight train on the Utah & Northern road broke in two at Preston Hill, Idaho, and the rear section ran into the forward one, piling up 14 cars in a bad wreck.

Very early on the morning of the 23d a coal train on the New York Central & Hudson River road broke in two near Chittenango, N. Y., and the rear section ran into the forward one, wrecking 20 cars. The wreck was piled up over all four tracks.

On the morning of the 25th a freight train on the New York Central & Hudson River road ran into a preceding freight which had stopped at Oneida, N. Y., wrecking two cars.

On the night of the 25th a passenger train on the Pennsylvania Railroad ran into the rear of another passenger train at the junction of the main line and the Centre street loop in East Newark, N. J. The main line train struck the train over the loop just as it was entering the main track, upsetting a car. The collision took place right under the windows of a block signal station.

On the night of the 25th a freight train on the Pittsburgh, Ft. Wayne & Chicago road broke in two near New Galilee, Pa., and the first section started on at great speed, and, before it could be stopped, ran into the rear of a preceding freight, wrecking several cars.

On the morning of the 26th a passenger train on the New York & New England road ran into the rear of a freight at Towantic, Conn., and the engine and several cars were wrecked.

On the morning of the 27th the engine of a freight train on the St. Paul, Minneapolis & Manitoba road became unmanageable at St. John, Minn. The engineer and fireman jumped off, and the engine ran at great speed to Willmar, seven miles, and there struck the rear of another freight, wrecking the caboose, killing one man and injuring two others.

On the morning of the [27th, as a freight train on the Rochester & Pittsburgh road was making a flying switch at Scottsville, N. Y., the two sections came together, wrecking several cars and killing a brakeman.

On the evening of the 27th a passenger train on the Chicago, Milwaukee & St. Paul road ran over a misplaced switch and into a yard engine standing on a siding in Portage, Wis. Both engines were badly damaged.

On the night of the 27th a freight train on the East Tennessee, Virginia & Georgia road ran into a preceding freight which had stopped near Knoxville, Tenn., wrecking the caboose and injuring the conductor badly.

On the night of the 28th a freight train on the New York, Pennsylvania & Ohio road ran into some cars which had broken loose from a preceding freight near Marion, O., wrecking several cars.

On the morning of the 30th a freight train on the Pennsylvania Railroad ran into the rear of another freight at Princeton Junction, N. J., wrecking several cars. The engineer and fireman were badly hurt.

On the night of the 30th a freight train on the New York Central & Hudson River road broke in two near Fairport, N. Y., and the rear section ran into the forward one, wrecking several cars.

BUTTING COLLISIONS.

On the evening of the 2d there was a butting collision between two freight trains on the Lake Erie & Western road in Muncie, Ind. Both engines were damaged.

On the morning of the 5th there was a butting collision between two freight trains on the Raleigh & Augusta Air Line, near Sanford, N. C. Both engines and several cars were wrecked and three trainmen hurt

On the afternoon of the 5th there was a butting collision betweeen the peach train and a regular freight train on the New York & New England road near Burnside, Conn. Both engines and six cars were wrecked, and an engineer badly hurt. It is said that the accident resulted from a mistake of the train dispatcher.

On the morning of the 13th, as a special passenger train on the Central Pacific road, having the Marquis of Lorne and the Princess Louise on board, was running into the yard at Port Costa, Cal., it ran into a shifting engine which was coming out. Both engines were badly damaged.

On the night of the 13th there was a butting collision between two freight trains on the Pittsburgh, Ft. Wayne & Chicago road near Plymouth, Ind. Both engines and four cars were wrecked, a tramp killed and an engineer hurt.

On the morning of the 14th there was a butting collision between a freight train and the pay train on the Delaware, Lackawanna & Western road near Shickshinny, Pa. Both engines were badly damaged, the engineer and a brakeman hurt.

On the afternoon of the 18th there was a butting collision between a freight and a construction train on the Port Huron & Northwestern road near Mayville, Mich. Both engines and several cars were damaged and three trainmen hurt.

On the morning of the 19th there was a butting collision between two freight trains on the Baltimore & Ohio road near Cassell, O., wrecking both engines and 20 cars, and injuring a brakeman.

On the afternoon of the 19th there was a butting collision between a Fitchburg and a New Haven & Northampton freight on the Troy & Greenfield road near Zoar, Mass. Both engines and several cars were wrecked and three trainmen hurt. The New Haven train had orders to wait at Charlemont, but did not obey them.

On the morning of the 20th there was a butting collision between two freight trains on the Cincinnati, Hamilton & Dayton road at Hamilton, O., by which both engines and one car were badly broken.

On the morning of the 21st there was a butting collision between two freight trains on the Cincinnati, Indianapolis, St. Louis & Chicago road near Lawrenceburg, Ind. Both engines and several cars were wrecked and an engineer hurt.

On the evening of the 21st there was a butting collision between two freight trains on the Texas & Pacific road near Toyah, Tex., by which both engines and 12 cars were damaged and a lot of sheep killed.

Early on the morning of the 22d there was a butting collision between two freight trains on the Kansas City, St. Joseph & Council Bluffs road near Henton, Mo., by which both engines were wrecked. The operator at Henton had been ordered to hold one train, but failed to do so.

On the afternoon of the 22d there was a butting collision between two shifting engines in the Cincinnati, Indianapolis, St. Louis & Chicago yard in Cincinnati, O. Both engines were badly damaged and a fireman hurt.

Very early on the morning of the 23d there was a butting collision between a circus train and a special train of empty passenger cars on the Rome, Watertown & Ogdensburg road near Rose, N. Y. Both engines and several cars were damaged and a circus employé killed. It is said that the operator at Rose had orders to hold the passenger train, but failed to do so.

On the afternoon of the 23d there was a butting collision between two freight trains on the Indiana, Bloomington & Western road near Springfield, O., wrecking both engines.

On the night of the 30th there was a butting collision between two freight trains on the Wabash, St. Louis & Pacific road near Dawson, Ill. Both engines and a number of cars were wrecked.

Late on the night of the 30th there was a butting collision between a freight train and a shifting engine on the Pittsburgh, Cincinnati & St. Louis road in Logansport, Ind. Both engines were damaged and an engineer hurt.

CROSSING COLLISIONS.

Very early on the morning of the 2d, in a heavy fog, a Wabash, St. Louis & Pacific freight train ran into a Pittsburgh, Cincinnati & St. Louis freight at the crossing near Chicago. Both engines and several cars were wrecked and two trainmen hurt. It is said that the Wabash engine did not stop as required by the rules.

On the morning of the 11th a New York, Lake Erie & Western freight train ran into a New York, Chicago & St. Louis construction train at the Big Tree crossing near Buffalo, N. Y. An engine and several cars were piled up in a bad wreck.

PASSING COLLISION.

On the afternoon of the 14th, as a freight train and a passenger train on the Philadelphia & Reading road were passing on a curve near Mt. Carbon, Pa., the forward car of the passenger train struck some long timbers loaded on a freight car, and two of them were forced into the car, tearing out one side of it and throwing the passengers in a heap. One man was killed and three hurt.

DERAILMENT, BROKEN RAIL.

On the morning of the 27th five cars of a freight train on the Milwaukee, Lake Shore & Western road were thrown from the track near Hebron, Wis., by a broken rail.

DERAILMENT, DEFECTIVE RAIL-JOINT.

On the morning of the 22d four cars of a freight train on the Utica, Clinton & Binghamton road were thrown from the track near Clinton, N. Y., by a defective rail-joint.

DERAILMENTS, BROKEN BRIDGE.

On the afternoon of the 4th a freight train on the Atlantic & Pacific road went through a bridge near Navajo Springs, Ari., which had been partly burned, and the engine and several cars were wrecked. The engineer and fireman were badly hurt. The bridge is supposed to have been set on fire by Indians.

On the morning of the 7th a freight train on the Cleveland & Marietta road broke through a small bridge near Cambridge, O. The engine went over, but 12 coal cars went down and were wrecked, injuring a brakeman.

On the afternoon of the 16th a bridge on the Wabash, St. Louis & Pacific road near Cairo, Ill., gave way under a freight train. The engine passed over, but 11 cars went down into the creek and were wrecked. A brakeman was hurt.

On the morning of the 20th a construction train on the North & West Branch road broke through a temporary trestle bridge at South Wilkesbarre, Pa., and a number of cars went down and were wrecked, injuring six laborers.

DERAILMENTS, SPREADING OF RAILS.

On the morning of the 4th a passenger train on the Southern Central road was thrown from the track near Moravia, N. Y., by the spreading of the rails, and several cars went down a high bank, injuring 12 passengers, most of them slightly.

On the morning of the 4th five cars of a freight train on the Brunswick & Albany road were thrown from the track near Isabella, Ga., by the spreading of the rails.

On the morning of the 6th a car of a passenger train on the Brooklyn, Bath & Coney Island road was thrown from the track in Brooklyn, N. Y., by the spreading of the rails. The car upset, knocking down part of a house.

On the morning of the 9th several coal cars of a train on the New York Central & Hudson River road were thrown from the track by the spreading of the rails on a siding in Rochester, N. Y. A brakeman was hurt.

On the evening of the 11th a freight train on the South Pacific Coast road was thrown from the track on a trestle bridge near San Leandro, Cal., by the spreading of the rails. The engine upset into the mud and six cars piled upon it in a bad wreck. The engineer was hurt, a brakeman killed at once and the fireman caught under the engine and held so fast that he was drowned by the rising tide before he could be relieved.

On the morning of the 12th ten cars of a freight train on the Wabash, St. Louis & Pacific road were thrown from the track at Honey Bend, Ill., by the spreading of the rails.

On the morning of the 26th the engine of a construction train on the New York Central & Hudson River road was thrown from the track in Rochester, N. Y., by the spreading of the rails.

On the morning of the 29th a freight train on the Lake Shore & Michigan Southern road was thrown from the track near Tecumseh, Mich., by the spreading of the rails. A track-gang were laying new rails at that point, and they were only partially spiked down.

DERAILMENTS, BROKEN AXLE.

On the evening of the 5th several cars of a coal train on the Pennsylvania Railroad were thrown from the track at Monmouth Junction, N. J., by a broken axle.

On the morning of the 8th six cars of a freight train on the Marietta & Cincinnati road were throw from the track near Little Hocking, O., by a broken axle.

On the night of the 9th a car of a freight train on the Central Railroad of New Jersey was thrown from the track at Bayonne, N. J., by a broken axle, and 14 cars were piled up in a bad wreck. A brakeman was killed.

On the night of the 13th a freight train on the Philadelphia & Erie road was thrown from the track near Wetham, Pa., by a broken axle, and several cars were burned up.

On the night of the 15th several cars of a freight train on the Wabash, St. Louis & Pacific road were thrown from the track in Decatur, Ill., by a broken axle.

On the morning of the 16th a freight train on the Philadelphia & Erie road broke an axle near Washington, Pa., and 14 cars were thrown from the track and wrecked. A trainman was killed and two others injured.

On the morning of the 16th a freight train on the Central Railroad of New Jersey was thrown from the track at West Elizabeth, N. J., by a broken axle, and several cars were wrecked.

On the morning of the 22d the engine of a passenger train on the New York Central & Hudson River road was thrown from the track at One-hundred and twenty-fifth street in New York by a broken axle. The road was blocked some time, causing a much more serious accident, as shown elsewhere.

DERAILMENTS, BROKEN WHEEL.

On the evening of the 1st a car of a passenger train on the Nashville, Chattanooga & St. Louis road was thrown from the track near Nashville, Tenn., by a broken wheel.

On the 5th several cars of a freight train on the Central Pacific road were thrown from the track near Montello, Utah, by a broken wheel. A trainman was slightly hurt.

On the morning of the 7th a passenger train on the New York, Lake Erie & Western road was thrown from the track at Jamestown, N. Y., by a broken wheel under the tender. The engine upset, injuring the fireman badly. A passenger was slightly hurt.

DERAILMENTS, WASH-OUT.

On the night of the 20th a freight train on the Missouri, Kansas & Texas road went into a washed-out culvert near Roanoke, Tex., and a number of cars were piled up in a bad wreck. Two brakemen were hurt.

On the night of the 22d a passenger train on the Wilmington & Weldon road ran into a wash-out near Tarboro, N. C. The express car was wrecked and the messenger hurt.

On the night of the 23d a freight train on the Pennsylvania Railroad ran into a wash-out near Kinkora, N. J., and the engine went down into the gap, injuring the engineer.

Early on the morning of the 24th a freight train on the Pennsylvania Railroad went into a gap where a small bridge, near Perth Amboy Junction, N. J., had been washed out by a heavy rain storm. The engine and two cars went down. The conductor was killed, the engineer and fireman badly hurt.

DERAILMENTS, ACCIDENTAL OBSTRUCTION.

On the night of the 14th a repair train on the Sodus Bay & Southern road ran into a tree which had been blown down across the track near Zurich, N. Y. The engine was thrown over, killing the engineer, injuring the fireman and a brakeman.

Early on the morning of the 19th 12 cars of a freight train on the Lake Shore & Michigan Southern road were thrown from the track near Farnham, N. Y., by a broken brake beam, which dropped down on the rails. The cars were piled up in a bad wreck, blocking the road 10 hours.

On the afternoon of the 20th two cars of a passenger train on the New York & New England road were thrown from the track near Camp, R. I., by a brake beam falling on the track.

DERAILMENTS, CATTLE.

On the morning of the 4th a freight train on the Pennsylvania Railroad ran over a horse near Dillerville, Pa., and several cars were thrown from the track.

The horse was thrown over on the opposite track immediately in front of another freight train, and seven cars of that train also were thrown off, the two derailments making a bad wreck.

On the morning of the 8th a passenger train on the Waynesburg & Washington road ran into a herd of cattle near West Union, Pa., and the whole train was thrown from the track.

On the evening of the 9th a freight train on the Texas & Pacific road ran over a bull near Decatur, Tex., and five cars were thrown from the track.

Near noon on the 20th a passenger train on the Windsor & Annapolis road ran over a cow near Berwick, N. S., and the engine and two cars were thrown from the track. A brakeman was killed and a passenger hurt.

On the morning of the 21st a repair train on the Long Island road ran over a pig near Hunter's Point, N. Y., and the engine and several cars were thrown from the track.

DERAILMENTS, MISPLACED SWITCH.

On the morning of the 4th several cars of a freight train on the New York & New England road were thrown from the track by a misplaced switch at Vernon, Conn., blocking the road three hours.

On the morning of the 5th the engine of a passenger train on the Bennington & Rutland road was thrown from the track at North Dorset, Vt., by a misplaced switch, and ran into a bank. The engineer and fireman were scalded and the conductor was slightly hurt.

On the afternoon of the 7th the engine and one car of a freight train on the Connecticut River road were thrown from the track in Greenfield, Mass., by a misplaced switch.

On the afternoon of the 11th a freight train on the New York & New England road was thrown from the track in Waterbury, Conn., by a misplaced switch.

On the afternoon of the 12th a passenger train on the Boston & Albany road was thrown from the track in the station in Springfield, Mass., by a misplaced switch. It appears that a boy was standing by the switch when one of the depot men, thinking he was too near the track, called out "turn and get." The boy thought he said "turn the switch," and did so, throwing off the engine.

On the morning of the 14th four cars of a freight train on the New York & New England road were thrown from the track in Manchester, Conn., by a misplaced switch.

On the morning of the 15th a freight train on the Missouri Pacific road was thrown from the track in St. Louis, Mo., by a misplaced switch.

On the morning of the 16th a passenger train on the Illinois & St. Louis road was thrown from the track in East St. Louis, Ill., by a misplaced switch. The engine and two cars upset down a bank and were damaged, and 13 passengers were slightly hurt.

On the evening of the 16th the engine of a passenger train on the Michigan Central road was thrown from the track near Freedom, Mich., by a misplaced switch.

On the evening of the 18th a shifting engine was thrown from the track in the New York Central & Hudson River yard in Rochester, N. Y., by a misplaced switch.

On the morning of the 19th a passenger train on the Utah Central road was thrown from the track in Salt Lake, Utah, by a misplaced switch.

On the morning of the 20th a passenger train on the New York & New England road was thrown from the track in Willimantic, Conn., by a misplaced switch.

On the morning of the 23d a passenger train on the Old Colony road was thrown from the track at South Braintree, Mass., by a misplaced switch.

On the night of the 23d several cars of a freight train on the Wabash, St. Louis & Pacific road were thrown from the track near Ritchie Ill., by a misplaced switch and wrecked. A boy who was stealing a ride was killed and a drover badly hurt.

On the afternoon of the 26th the engine and three cars of a passenger train on Cincinnati, Indianapolis, St. Louis & Chicago road were thrown from the track near Templeton, Ind., by a misplaced switch. The engine upset and was badly damaged.

On the morning of the 30th a freight train on the Old Colony road was thrown from the track at Dighton, Mass., by a misplaced switch.

On the evening of the 30th the engine and two cars of a passenger train on the Eastern road were thrown from the track in Rochester, N. H., by a misplaced switch.

DERAILMENTS, OPEN DRAW.

On the morning of the 2d a freight train on the Central Vermont road ran into an open draw in Burlington, Vt., and was wrecked. It is said that the engineer did not know or understand the signals.

On the evening of the 29th the dummy passenger train on the Grand Trunk road ran into the open draw of the International Bridge at Buffalo, N. Y. The engineer and a passenger were killed, the conductor and three passengers hurt. The usual signals were displayed, but the engineer did not stop.

MALICIOUS DERAILMENT.

On the morning of the 18th a passenger train on the Boston & Albany road struck a rail which had been laid across the track near Rochdale, Mass., and the whole train except the sleeping car went off the track, the engine and tender going down a bank. The engineer and a brakeman were badly hurt.

UNEXPLAINED DERAILMENTS.

On the morning of the 3d a passenger train on the Camden & Atlantic road ran off the track in Atlantic City, N. J., doing but little damage.

On the morning of the 5th three cars of a freight train on the Missouri, Kansas & Texas road ran off the track close to a high bridge near Troy, Tex. They ran on the bridge on the ties, but did not go over.

On the morning of the 8th a coal train on the Central Railroad of New Jersey became unmanageable near Penobscot, Pa., the engine being unable to hold it on the steep grade. The train ran down the grade to Ashley at great speed, and there jumped the track, wrecking the engine and several cars.

On the morning of the 8th several cars of a freight train on the Chesapeake & Ohio road ran off the track near Trevilian, Va., blocking the road seven hours.

On the evening of the 12th several cars of a freight train on the Buffalo, New York & Philadelphia road ran off the track near Shippen, Pa. A brakeman was killed.

Between midnight and 1 o'clock on the morning of the 13th as a through freight train on the New York & New England road was passing east through Bristol, Conn., the caboose jumped the track and the conductor, S. C. Hoffman, was thrown from the platform under the wheels and killed. The jolting of the caboose put out the lights, and the engineer, supposing that the train had broken in two, put on steam, to keep out of the way of the cars which he thought were detached, the train being then on a down grade. In this way the caboose was dragged for half a mile over the ties until it reached a road crossing, where it jumped back on the track again. The train ran a quarter of a mile further before it stopped. It is said that the speed at which the caboose was hauled over the ties was about 15 miles an hour.

On the morning of the 13th a car of a freight train on the Philadelphia & Erie road ran off the track in Corry, Pa., and ran into an adjoining building, knocking it down.

On the morning of the 13th some 30 cars of a coal train on the Pennsylvania Railroad were thrown from the track near Lambertville, N. J., blocking the track six hours.

On the 13th two cars of a passenger train on the New York, Texas & Mexican road ran off the track at Navidad, Tex., and two trainmen were slightly hurt.

On the afternoon of the 14th three cars of a freight train on the Nashville, Chattanooga & St. Louis road ran off the track near Belle Meade, Tenn., blocking the road two hours.

On the morning of the 15th, as a passenger train on the Freehold & Keyport road was running over a trestle bridge near Matawan, N. J., the baggage car jumped the track and fell some 30 feet; the car was wrecked and the baggageman hurt.

On the 16th a freight train on the Florida Southern road ran off the track near Ocala, Fla., and two cars were wrecked.

On the evening of the 17th a car of a passenger train on the Pennsylvania Railroad ran off the track at East Newark, N. J., blocking the track two hours.

On the night of the 21st several cars of a freight train on the Pennsylvania Railroad ran off the track near Bristol, Pa., blocking the track two hours.

On the night of the 21st a freight train on the Wabash, St. Louis & Pacific road ran off the track near Penn, Ind., and four cars were wrecked.

Very early on the morning of the 24th a circus train on the Louisville & Nashville road ran off the track near Lancaster, Ky., and 15 cars went down a bank and were piled up in a bad wreck. Three circus men were killed, three fatally injured and eight less severely hurt.

Very early on the morning of the 26th the engine of a passenger train on the Pennsylvania Railroad ran off the track in East Newark, N. J., delaying the train an hour.

On the afternoon of the 26th several cars of a freight train on the Chicago, Milwaukee & St. Paul road ran off the track near Winona, Minn., blocking the road three hours.

On the evening of the 26th a freight train on the Gulf, Colorado & Santa Fe road ran off the track near Ft. Worth, Tex., and several cars were wrecked.

On the morning of the 30th several cars of a freight train on the Missouri, Kansas & Texas road were thrown from the track near Hillsboro, Tex., blocking the road several hours.

BOILER EXPLOSIONS.

Early on the morning of the 2d, as a freight train on the Texas & Pacific road was just starting from Anona, Tex., the crown-sheet of the fire-box gave way. The steam and fire were blown out into the cab, scalding the engineer, fireman, conductor and a brakeman very badly.

On the morning of the 19th, as a passenger train on the Chicago & Northwestern road was near Oconto, Wis., the boiler of the engine exploded. The force of the explosion seems to have been downward, and the engine was lifted up and thrown over to one side of the track in such a way that it did not at all obstruct the train, which ran on over a mile before it stopped. The engine was completely wrecked, but the fireman was but slightly hurt and the engineer escaped injury entirely.

On the morning of the 21st, as a coal train was running on a siding on the Central Railroad of New Jersey, at Green Brook, N. J., the boiler of the engine exploded. The whole locomotive was lifted up some distance and fell on the main track, being completely wrecked. The engineer and another man in the cab were slightly hurt, and three men in the tender were badly scalded. The engine was a Philadelphia & Reading consolidation engine of the Wootten dust-burning pattern.

OTHER ACCIDENTS.

On the afternoon of the 1st, as a passenger train on the New York, New Haven & Hartford road was near Berlin, Conn., a parallel rod on the engine broke, and the rod on the other side also broke a moment afterwards. The loose ends tore up the cab and damaged the engine badly.

On the morning of the 9th the engine of a passenger train on the New York Central & Hudson River road broke a parallel rod when near Gasport, N. Y., and the loose end tore out one side of the cab.

SUMMARY.

This is a total of 153 accidents, by which 34 persons were killed and 136 injured; a daily average of 5 accidents, 1 killed and 4½ injured.

Eighteen of the killed and 68 of the injured were railroad employés; 16 of the killed and 68 of the injured were passengers or others riding on the trains.

Of the whole number of casualties 86, or 50.6 per cent., were to employés, and 84, or 49.4 per cent., to passengers.

For the nine months of 1882 there have been reported 955 accidents, in which 268 persons were killed and 1,118 injured; a monthly average of 106 accidents, 30 killed and 124 injured.

Passenger Meeting of the Joint Executive Committee.

The following is the official report of the proceedings of the Joint Executive Committee (Passenger Department), at a meeting held at the office of the Chairman, No. 346 Broadway, New York, Oct. 10 to 12, 1882:

The following roads were represented:
Baltimore & Ohio, C. K. Lord.
Boston & Albany, E. Gallup.
Canada Southern, W. H. Hurlburt.
Cleveland, Columbus, Cincinnati & Indianapolis, O. B. Skinner, A. J. Smith.
Grand Rapids & Indiana, A. B. Leet.
Indianapolis & St. Louis, O. B. Skinner, A. J. Smith.
Lake Shore & Michigan Southern, W. P. Johnson.
Louisville & Nashville, C. P. Atmore.
Marietta & Cincinnati, T. P. Barry.
Michigan Central, O. W. Ruggles.
New York Central & Hudson River, H. J. Hayden, C. B. Meeker.
New York, Lake Erie & Western, Jno. N. Abbott.
New York, Pennsylvania & Ohio, A. E. Clark.
Ohio & Mississippi, W. B. Shattuc.
Pennsylvania, J. R. Wood.
Pennsylvania Co., E. A. Ford.
Pittsburgh, Cincinnati & St. Louis, E. A. Ford.
Vandalia Line, E. A. Ford.
Wabash, St. Louis & Pacific, H. C. Townsend.

TUESDAY'S SESSION.

The Chairman said that the meeting which was called for Oct. 3, to consider the result of the introduction of the differential fare system, had been postponed one week, as the statements necessary for comparison of the business for the month of September, from which time such fares took effect, with previous months, had not been received. Presuming, however, that all the roads had formed an opinion in regard to the operation of the differential fares, the first object of the meeting would be to get an expression of the views of those present on that subject.

A long discussion took place, in which each of the representatives expressed his views, which were generally satisfactory, and it was agreed to leave the fares in operation for the present.

The Chairman then called the attention of the Committee to some of the difficulties which had occurred in carrying out the agreement at Chicago. Some of the roads had been charged with paying commissions, which had the effect of reducing the fares. The roads to which the business had been diverted denied that they had paid any commissions, and the only way the reduced fares could possibly be accounted for was by supposing that outside parties were making these reductions with the view of breaking up the agreement.

Also, that it had been charged that the orders accepted from steamship and other agents by the Chicago lines for Eastbound tickets were being used improperly, and for the purpose of reducing fares, which was denied, it being explained that such orders were accepted at full fares only. A full discussion of the points in question by the Committee resulted in the following action:

INCREASE OF FARES OVER ROUTES UPON WHICH OUTSIDE AGENTS MAY COMBINE TO BREAK UP THE AGREEMENT.

"*Resolved*, That should it appear that tickets are being sold at reduced fares through the influence of outside parties, by any route over which differential fares have been established, to such an extent as will increase the sales beyond the proportion allowed on basis of the sales for 1881, then the differential fare by such route shall be reduced so as to equalize the business."

NON-ACCEPTANCE OF ORDERS ISSUED BY STEAMSHIP AND OTHER AGENTS.

"*Resolved*, That from and after Oct. 20, 1882, no orders for Eastbound tickets from differential-fare points in the West to differential-fare points in the East will be accepted from steamship or other agents, except from such parties as may be especially authorized by mutual agreement."

In accordance with the conditions of the foregoing resolution, the Michigan Central, Canada Southern, and New York, Lake Erie & Western Railroads jointly, were requested by the Commissioner to raise the first class fare from Chicago to New York by that route from the agreed fare of $18.50 to $19, to which those roads consented; the increase to be made on Oct. 12.

DIFFERENTIAL FARES BETWEEN INTERMEDIATE POINTS.

The establishment of such fares was discussed without action.

WEDNESDAY'S SESSION.

ADOPTION OF CONTINUOUS-TRAIN PASSAGE TICKETS FROM DIFFERENTIAL-FARE POINTS TO DIFFERENTIAL-FARE POINTS.

"*Resolved*, That on and after Oct. 20, 1882, any road selling tickets from differential-fare points to differential-fare points, including Philadelphia, Baltimore and Washington, whether the road issuing the ticket, or whether any of the intermediate roads over which the tickets reads, are members of the Joint Executive Committee or not, must adopt the continuous-train ticket for limited or special fares."

BASIS FOR UNLIMITED TICKET FARES BETWEEN DIFFERENTIAL-FARE POINTS.

"*Resolved*, That on and after Nov. 1, 1882, fares for unlimited tickets between the differential-fare points, including Philadelphia, Baltimore and Washington, shall be the sums of the local fares, except by mutual agreement.

"On motion, a committee of five was appointed to prepare a form of continuous-train passage ticket for use between differential-fare points, and to formulate instructions requiring the adoption of such form as may be agreed upon."

THURSDAY'S SESSION.

The committee appointed to prepare a form of continuous train passage ticket reported as having taken no action, and was discharged.

Subsequently, a committee consisting of the general passenger agents of the trunk lines and Mr. E. Gallup, General Passenger Agent Boston & Albany Railroad, was appointed for the same purpose, to report at next meeting.

The question of protection for members of this committee as against roads which are not members, was discussed with the following result:

RELATIONS WITH COMPANIES NOT MEMBERS OF THE JOINT EXECUTIVE COMMITTEE.

"*Resolved*, That companies not members of the Joint Executive Committee, but which desire to exchange or transact business with any of the companies members of the Joint Executive Committee, shall be subject to the same rules and conditions, and entitled to the same protection of their interests, as companies members of the Joint Executive Committee.

"The Commissioner is requested to secure the co-operation of all such companies in carrying out the agreements of the Joint Executive Committee.

"Companies not members of the Joint Executive Committee, but interchanging passenger traffic with members of the Committee, that may be ascertained to be making fares or paying commissions, or taking other action inconsistent with the rules of the Joint Executive Committee, should be advised of such rules, and requested to conform to them within a specified and reasonable time. Failing to respond or act upon such request, the Joint Executive Committee will protect its own members and the revenues of their companies, by declining to interchange passenger business with such roads."

On motion, it was agreed that the establishment of differential fares to and from the principal intermediate common points within the territory covered by the roads represented on this Committee, and the completion of the contract between the Western roads for division of passenger earnings, with the adoption of percentages under which such division will be made, shall be the special subjects for consideration at the next meeting.

Adjourned to Wednesday, Nov. 22, 1882, at office of the Chairman, New York.

ALBERT FINK, Chairman.

R. T. BRYDON, Secretary.

Report of the Georgia Railroad Commission.

(*Continued from page* 650.)

Circulars Nos. 27 and 28 were passed Oct. 2, and under the law cannot go into effect until Nov. 1, 1882.

Circular No. 27 is as follows:

"1. All connecting railroads which are under the management or control, by lease, ownership, operation or otherwise of one and the same railroad company shall, in applying the Commissioners' tariffs, for all purposes of transportation, within the limits of this state, be considered as constituting but one and the same railroad; and the rates shall be computed as upon parts of one and the same railroad; and all exceptions to this rule heretofore made by this Commission are hereby repealed.

"2. Under the preceding paragraph, the following railroads will, for all purposes of transportation, be considered as forming different 'railroad systems,' and each 'system' will be considered as one continuous railroad in computing rates between stations on the different roads, branches, operated or leased lines composing that particular 'system.'

"3. The 'Central Railroad system' will consist of the Central Railroad, the Southwestern Railroad, the Savannah, Griffin & North Alabama Railroad, the Upson County Railroad, and all branches or railroad lines owned, leased or operated by either of these railroads situated in Georgia.

"4. The 'East Tennessee, Virgina & Georgia system' will consist of the East Tennessee, Virginia & Georgia Railroad in Georgia, the Cincinnati & Georgia Railroad, the Macon & Brunswick Railroad, and all the branches and lines owned, leased or operated by them.

"5. The 'Richmond & Danville system' will consist of the Richmond & Danville Railroad (or Atlanta & Charlotte Air-Line) in Georgia, the Northeastern Railroad, the Elberton Air-Line Railroad, the Hartwell Railroad, the Lawrenceville Railroad, the Roswell Railroad, the Georgia Pacific Railroad.

"6. The 'Savannah, Florida & Western system' will consist of the Savannah, Florida & Western Railroad and its branches and leased or operated lines in Georgia, and the Waycross & Florida Railroad.

"7. The maximum rates on lumber for any distance on all railroads within this state will be 20 per cent. less than the rates on Class P of the Commissioners' 'standard tariff' for the same distance.

"8. This circular goes into effect Nov. 1, 1882."

Circular No. 28 is in the following terms:

"1. The maximum rates of freight heretofore allowed the Richmond & Danville (or Atlanta & Charlotte Air-Line) Railroad, the Northeastern Railroad, the Georgia Pacific Railroad, the Elberton Air-Line, the Hartwell Railroad, the Lawrenceville Railroad, and the Roswell Railroad are hereby repealed; and in place thereof, those railroads are permitted to add the following percentages to the Commissioners' 'standard freight tariff,' and charge such totals as maximum freight rates, viz.: Add 10 per cent. to Classes 1, 2, 3, 4, 5, 6, A, B, E, G, H, and J; add 20 per cent. for fertilizers in Class K. Classes C, D, and F remain at 'standard tariff,' as allowed in Circular 20. All other classes remain at Commissioners' 'standard tariff,' except lumber, which is 20 per cent below Class P of standard tariff. The computation of freight rates between stations on any and all of the above railroads will be made strictly in accordance with rules of Circular 27.

"2. Paragraphs 1, 3, and 5 of Circular 10 are hereby repealed. The Atlanta Division of the Central Railroad is placed under the rules of paragraph 2 of Circular 10. All joint rates issued by the Central Railroad under paragraph 5 of Circular 10 are hereby withdrawn. The computation of freight rates between stations on the Central Railroad, the Southwestern Railroad, the Savannah, Griffin & North Alabama Railroad, the Upson County Railroad, and any of the leased lines or branches of these railroads will be made strictly in accordance with rules of Circular 27.

"3. The Louisville & Wadley Railroad is permitted to add

to the Commissioners' 'standard freight tariff' the following percentages, and to charge such totals as maximum freight rates, viz.: add 30 per cent. to Classes 1, 2, 3, 4, 5, 6, A, B, E, G, and H; add 15 per cent. to cotton rates; add 20 per cent. to fertilizers in Class K. Classes C, D, and F remain at standard rates allowed in Circular 20.

"4. This circular goes into effect Nov. 1, 1882."

These two circulars, as will be seen by reading them, refer to the same subjects; and were intended by the Commission to enforce Rule No. 1, which was the first rule adopted by this Commission for the government of railroads. This has stood as one of our rules, except in one instance. By Circulars 27 and 28, we intend to make the rule applicable to every road in the state, without any exception whatever. Upon this rule was based what is known as the "Commissioners' Standard Freight Tariff."

Rule No. 1 was intended as one of the means of carrying out the principles of the law creating the Commission, which we construe to mean the recognition of the right of every man in the state of Georgia to select his own market, either home or foreign, in which to purchase his supplies or sell his products, without obstruction on the part of transportation companies, either in the form of unreasonable and unjust rates and arbitrary rules, or by combinations or agreements, expressed or implied, between such companies.

Properly enforced, Rule No. 1 will prevent cumulative rates, or what in railroad parlance are known as the "sums of the locals," from being charged on shipments between stations on different portions of connecting roads in cases where such connecting roads are virtually owned, operated or controlled by one and the same carrier. Experience has shown that this rule is not only correct in principle, but beneficial to the public, and reasonable and just to the railroads.

To give a more clear understanding of Circulars 27 and 28, we here present extracts from what is therein referred to as Circular No. 10, dated Aug. 13, 1880:

"1. The Central Railroad & Banking Company is authorized to operate their railroads in the following divisions: The Savannah, the Southwestern Railroad, the Atlanta, the Savannah, Griffin & North Alabama Railroad.

"2. On the Savannah and Southwestern Railroad divisions and the Savannah, Griffin & North Alabama Railroad, upon all classes other than 'specials,' the maximum freight rates between 30 and 40 miles to be 50 per cent. above standard rates; between 40 and 70 miles, 40 per cent.; between 70 and 100 miles, 30 per cent., and 100 miles and over, 20 per cent., as heretofore fixed.

"3. Upon the Atlanta Division on all classes other than 'specials,' the maximum rates to be 30 per cent. over 'standard.'

"5. A tariff of joint rates on all the roads operated by the Central Railroad & Banking Company, prepared with the approbation of the Commission, will be furnished by the company on application.

"The Louisville & Wadley Railroad, not being owned or operated by a connecting railroad, and the authorities having shown that the standard tariff was not, in our opinion, sufficiently high, we granted that road an additional percentage."

Circular 29, dated Oct. 9, 1882, was rendered necessary by the extensions of the East Tennessee, Virginia & Georgia, making its length within the state between the Tennessee state line and Brunswick, Ga., more than 350 miles, the distance heretofore given in our "Standard Freight Tariff," for which rates had been made. It is as follows:

"1. To meet the extensions of railroads within the state, the following additions are made to the "Standard Freight Tariff."

CLASS GOODS.

Distances.	Per 100 pounds. 1st	2d	3d	4th	5th	6th	A	B	C	D	E	Per bbl. F	G	Per 100 lbs. H
	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	cts.	$ cts.	cts.
360.....	85	75	60	50	40	35	35	35	23	21	40	46	1 22	50
370.....	85	75	60	50	40	35	35	35	23	21	40	46	1 22	50
380.....	88	76	61	51	41	36	36	36	25	23	41	50	1 25	52
390.....	88	76	61	51	41	36	36	36	25	23	41	50	1 25	52
400.....	88	76	61	51	41	36	36	36	25	23	41	50	1 25	52
410.....	91	77	62	52	42	37	37	37	26	24	42	52	1 28	54
420.....	91	77	62	52	42	37	37	37	26	24	42	52	1 28	54
430.....	91	77	62	52	42	37	37	37	26	24	43	52	1 28	54
440.....	94	78	63	53	43	38	38	38	27	25	43	54	1 31	56
450.....	94	78	63	53	43	38	38	38	27	25	43	54	1 31	56
460.....	94	78	63	53	43	38	38	38	27	25	43	54	1 31	56

SPECIALS.

Distances.	Per 100 lbs. J	K	Per ton. L	M	Per car load. N	O	P	Per 100 lbs. H
	cts.	cts.	$ cts.	$ cts.	$ cts.	$ cts.	$ cts.	cts.
360.....	45	17	3 50	3 28	60 00	27 00	25 00	24
370.....	45	17	3 50	3 28	60 00	27 00	25 00	24
380.....	47	18	3 60	3 41	63 00	29 00	27 00	26
390.....	47	18	3 60	3 41	63 00	29 00	27 00	26
400.....	47	18	3 60	3 41	63 00	29 00	27 00	26
410.....	48	19	3 70	3 54	66 00	31 00	29 00	28
420.....	48	19	3 70	3 54	66 00	31 00	29 00	28
430.....	48	19	3 70	3 54	66 00	31 00	29 00	28
440.....	49	20	3 80	3 67	69 00	33 00	31 00	30
450.....	49	20	3 80	3 67	69 00	33 00	31 00	30
460.....	49	20	3 80	3 67	69 00	33 00	31 00	30

"2. The Class M column of the 'standard freight tariff,' between 200 and 350 miles inclusive, is changed to read as follows:

Miles.	Dollars per ton.	Miles.	Dollars per ton.	Miles.	Dollars. per ton.
200.....	$2.45	260.....	$2.75	320.....	$3.05
210.....	2.50	270.....	2.85	330.....	3.15
220.....	2.55	280.....	2.85	340.....	3.15
230.....	2.65	290.....	2.95	350.....	3.28
240.....	2.65	300.....	2.95		
250.....	2.75	310.....	3.05		

We have thought it best in this report to confine ourselves mainly to a simple statement of the circulars, heretofore set forth, issued since the date of our last report, together with the reasons, in brief, which induced our action in the premises. Many other questions between the railroads and public have been passed upon by this board. The action of the Commission, in reference thereto, cannot be here given without making this report too lengthy. Our records will show particularly and at length all our official acts. To these records we especially invite the attention of your excellency and of the Legislature.

The effect of the action of this Commission upon the interests of the people of the state may be illustrated by giving one instance alone.

The actual saving in rates on the one article of cotton, to the benefit of our cotton producers, will amount, during the present season, to more than a half million dollars, as the present cotton crop of Georgia will, according to the best information, amount to over 700,000 bales. It was soon found that the rates of transportation for cotton, from interior points in our state, agreed upon by the railroads and steamships at a meeting in New York, which were published to take effect Sept. 1, 1882, would have to be abandoned, unless the cotton rates from interior Georgia markets to the seaboard cities of Savannah and Brunswick were advanced. The determination of this Commission not to increase the cotton rates to those cities at that time was publicly known. The result was that at a meeting held in Atlanta, Sept. 13, the railroad and steamship companies agreed to certain reduced cotton rates, which went into effect Sept. 14, 1882.

The manner in which this saving will be effected may be clearly seen by reference to the comparative statement of cotton rates from a few of the markets of our state, given below:

RATES ON COTTON PER 100 POUNDS.

From	To Baltimore. Rates Sept. 1, 1882	Rates Sept. 14, 1882	To New York, Phila'phia. Rates Sept. 1, 1882	Rates Sept. 14, 1882	To Fall River, Providence, Boston. Rates Sept. 1, 1882	Rates Sept. 14, 1882
Augusta	71	51	76	57	92	67
Milledgeville, Macon, Atlanta, Athens, Rome, Dalton	84	64	89	70	95	80
	89	67	94	75	1.00	85
Fairburn	1.03	81	1.08	89	1.16	99
Palmetto	1.05	83	1.10	91	1.16	1.01
Newnan	1.07	85	1.14	93	1.18	1.03
Grantville	1.11	89	1.16	97	1.22	1.07
Hogansville	1.11	89	1.16	97	1.22	1.07
LaGrange	1.15	93	1.20	1.01	1.26	1.11
West Point	1.17	95	1.22	1.03	1.28	1.13
Opelika	1.07	85	1.12	93	1.18	1.03
Marietta, Ringgold, Kingston	1.03	81	1.08	89	1.14	99
Cartersville	1.07	85	1.12	93	1.18	1.03
	1.09	87	1.14	95	1.20	1.05

We present here a statement of the office expenditures made during the last fiscal year. Vouchers for these expenditures are on file in this office, ready to be submitted to the proper authorities:

Wages of office attendants	$46.50
Gas bill	29.00
Telegrams	3.65
Subscriptions to newspapers and periodicals	39.95
Postage, stamps, etc	75.80
Fuel	24.80
Express charges	1.20
Stationery and desk furniture	8.40
Books	4.90
Insurance on furniture and incidentals	3.00
Office furniture	6.35
Maps for office	5.55
Office rent, July 1, 1881, to Oct. 1, 1882	250.00
	$500.00

We may be pardoned for stating that as Georgians we feel a pride in being able to say that many states of the union, and even the authorities of European governments, have sought information as to the provisions of the act creating this Commission, and of its practical workings. The main provisions of our law have, in some instances, been adopted by other states.

Since the date of our last report, Texas and New York have placed themselves in the list of states that have found it necessary to establish commissions for the control of the transportation interests within their limits.

The constitutionality of the law creating this Commission has been settled in the minds of all thinking people. The experiment which Georgia has made has been successful; and the law, as it now exists, is believed by not only our own, but by other states, to be sufficient for the accomplishment of the purposes for which it was enacted.

We have at present no change in the law to recommend except that a proper increase in the salary of our Secretary be made. The compensation now allowed him we consider insufficient remuneration for the great labor devolving upon and the skill and experience required of him in the discharge of his very responsible duties.

Experience has proved that the transportation companies need a power over them which will curtail their growing extravagance and lessen their current expenses for the benefit of their own stockholders. The people need a power sufficient to control these corporations and prevent excessive and discriminating rates, growing out of loose and extravagant management.

This board has constantly kept in view the very desirable object of bringing the railroads and the people to a full recognition of each other's legal and equitable rights.

Apprehensions that the Commissioners might abuse their powers have ceased to exist. There is a feeling of confidence that no combination of capital, either home or foreign, invested in railroads, can materially injure or affect the public interest, so long as transportation is wisely and prudently regulated by law.

Railroad, manufacturing, mining, agricultural and every other material interest have, within the past three years, received a remarkable impetus in Georgia. Confidence in the stability of the value of every species of property in this state, and in our progressive prosperity as a people, is greater than ever before.

All predictions that the action of the Railroad Commission of Georgia would paralyze the railroad interests of the country have failed. An experience of three years of the practical operation of railroads in this state, and under the supervision of law, has for that period shown largely increased revenues to the railroads, larger dividends to the railroad stockholders, higher prices for railroad shares, greater volume of business, largely stimulated travel, greatly increased tendency to invest capital in our state, more miles of railroad built and being built in Georgia, and corresponding benefits to the public generally, and the railroad authorities and the people on better terms with each other than ever before during a similar period in our history.

JAMES M. SMITH,
CAMPBELL WALLACE,
L. M. TRAMMEL,
} Commissioners.

The Vermont Railroad Case.

The following report from President F. A. Brooks to the Vermont & Canada stockholders gives their side of this famous case:

A receivership established in 1861 for the recovery of your then arrears of rent lasted until 1864, when all such rent arrears, as well as the rental accruing down to June 1, 1864, became adjusted and satisfied, pursuant to a written agreement between this company and its lessee, or the mortgagees of the lessee, and called the compromise agreement. This agreement provided for an enlargement of your original rental by adding thereto a sum equal to 8 per cent. per annum upon the amount of all rent then in arrears, which was capitalized or converted into stock and divided among the stockholders, and so realized by this corporation. On the part of the lessee represented by the first-mortgage bondholders, to whom the road had been surrendered in 1852, it was agreed that this enlarged rental should be paid directly from the earnings or net income of the Vermont Central and the leased road, and that this should be provided for by a decree of the Court of Chancery to that effect. Such a decree, called the "compromise decree," was, in fact, signed by Chancellor Poland, Jan. 19, 1864, the legal validity of which is now a matter of controversy. The first-mortgage trustees continued in possession of the roads as before and operated the same, claiming to do so, however, as officers of the Court, and applying the net income in the first instance to this rental. This they did regularly every six months until June 1, 1872. They had, however, between 1864 and 1872, in their pretended capacity of receivers of the Court of Chancery, and without other authority for the purpose, contracted immense debts, which (excepting equipment loans) were for purposes wholly foreign to the wants or requirements of the two roads. In 1872 the same persons procured the charter of the Central Vermont Railroad Company, representing their intention to be to use that charter in organizing the mortgage bondholders of the Vermont Central Railroad as a corporation under the same, and thereafter that such new corporation would make suitable provision for the managers' debt by assuming or retiring it. In May, 1873, they organized themselves into a company under this charter, practically excluding the Vermont Central Railroad mortgage bondholders therefrom altogether; and in June, 1873, they procured from Chancellor Royce an order for placing themselves thus organized as a corporation in possession and control of both the Vermont Central and Vermont & Canada railroads. The order so obtained from Chancellor Royce in terms authorized these men, as a corporation, to take and hold the Canada road and the earnings thereof (as well as the Vermont Central), subject to the order of this Chancellor, and without any payment whatever of rental to you therefor; and they took and have held your railroad ever since by order of this Chancellor without making compensation for the use thereof to you or any one else. In 1876 these men, *alias* the Central Vermont Railroad Company, made their first attempt, by application to Chancellor Royce, to obtain order of an sale of your railroad to satisfy debts so contracted by them, intending to become the purchasers, and thereby to acquire a title in themselves to your road. This application for a sale was taken on appeal from Chancellor Royce to the Supreme Court, and by that Court was denied, Oct. 30, 1877. You may recollect that this same attempt was soon afterwards renewed by the same parties, through a suit termed the Langdon suit, brought and prosecuted, as the Court itself finds, by this same Central Vermont Railroad Company, and not yet ended. That suit was argued before the Supreme Court for the second time during the past year, and an opinion, written by Judge Redfield, was promulgated on the fifth day of August last.

In both cases referred to the propositions contended for by the Central Vermont Company were:

"1st. That the managers, in contracting their large debts had acted as the officers of the Court of Chancery, said Court being in judicial possession and management of said roads at the time:

"2d. That whenever debts are contracted by officers of courts holding judicial possession of property, such debts become, by reason of that fact alone, charges or incumbrances upon such property, superior to all previously existing titles or claims thereto, whether declared to be so at the time by the Court or not; and that it makes no difference in this respect, that the Canada road itself never went into possession of the Court, but only the lessee's interest therein went into the hands of the Court, viz., a leasehold interest."

Both these propositions were stoutly contested by the defendants and fully argued at the first hearing in the Supreme Court in 1877, and the decision of that Court in 1877 (50 Vt. R., 500) directly negatived the first proposition, and the bill was dismissed on that ground without passing upon the second proposition.

The Court in its opinion, as drawn up by Judge Redfield; has now determined that the Court of Chancery has been in strict judicial possession and management of both defendant roads through its receivers or officers ever since 1861, and is at present in such possession and management through the Central Vermont Company as its Receiver, and that nothing different from this was decided by the same Court in 1877. (50 Vt. R., 500.) It is even stated by Judge Redfield that the opinion of 1877 "has been * * in some measure perverted," meaning, as we suppose, that it had been so perverted by our counsel in their argument addressed to this Court on that subject. This charge of Judge Redfield, that we, or our counsel, have "*perverted* the opinion of 1877," or attempted to do so, is a serious one if true, and demands careful examination. Let us consider it. The position taken by our counsel, in the argument referred to, was that this same Court had decided in 1877 (opinion by Barrett, J.,) that the Court of Chancery, after the compromise decree of 1864, was no longer in judicial possession and management of these railroads. If not, it followed that the debts contracted by the managers did not attach to your railroad, and, in that event, no such thing would be claimed by the plaintiffs. The solution of this question was then understood to depend upon the other question, whether or not the decree of 1864 was strictly judicial or not. If it was, then a perpetual receivership had been established. This feature of perpetuity was referred to and discussed, as bearing upon the legal quality or validity of this decree. Judge Redfield, upon this subject, says:

"It is not easy to see anything in that decree that was *extra-judicial*, or that a Court might not do in the exercise of its judicial prerogative.

"The claim that other property alien to the trust had become incorporated into the decree of 1864, and therefore the decree was without judicial quality, is not supported; and under the act of the Legislature the Court had proper jurisdiction to make decree in the premises."

Compare now the above quotations from Redfield's opinion with the opinion of 1877, by Barrett, J. (50 Vermont, 500.) Judge Barrett says:

"As already said and sufficiently shown, the position and office of the Central Vermont Railroad Company is to be regarded, not as that of a receiver, in the sense of the law, but of managing agent for the parties in interest, having the character and office of an administrative trust."

This opinion seems to us to show that the Vermont Supreme Court in 1882 has proved entirely false to the propositions of law enunciated by it in with entire concurrence (as it is stated in the opening sentence of the opinion of 1877), and that the guilt of perverting this decision of 1877 rests on the very man who charges it upon us.

[If any reader is left in doubt upon the point last con-

sidered, we would refer him to 53d vol. of Vermont Reports, p. 278, where Judge Barrett, the writer of the decision of 1877, deals with this subject in unmistakable terms. He there says: "It was in that case (50 Vt., 500) decided that after the compromise decree there had been *no receivership* created and administered *by the Court*, but only a *contract management*, under the control of the parties in interest. It should now be held otherwise, nor should this case be disposed of on any different ground. This was expressly held and demonstrated in the decision of 1877."]

The decision of 1882 has, however, now become law for the Court that made it, whether it is consistent with that of 1877 or not. This question, therefore, is no longer important to us, except as it may bear upon suits pending in your behalf in the United States Circuit Court, and begun before the late decision of the state court was announced. Taking it, then, to be true for our present purpose, but not otherwise, that the Court of Chancery continued in judicial possession and control of the road after the decree of 1864, as fully as it had been before that decree, and giving that decree full force and effect, still that decree was for the sole benefit of your company as a creditor for the rental (as enlarged by the compromise decree), and the legal situation in other respects remained precisely the same as before. The decree did prescribe what should be done with the surplus net earnings not required by the managers to meet your rental; but it did not vary the appropriation of that surplus from that which the law itself would have made had the decree been silent on the subject. There is not a syllable in the compromise decree which contemplates as possible, or permitted, that any indebtedness whatever should be contracted by the managers, or that there would ever be a time when the income of both roads (180 miles in length and fully equipped) would not suffice to pay all necessary operating expenses and the amount of Canada rental, as then enlarged.

And this time never did come: and if the Court of Chancery and the managers had kept themselves within the terms of the compromise decree, not a dollar of debt would have been contracted by them for any one to pay.

What did really happen was this: The managers, under the guidance of Governor Smith, who was anxious to give value to the capital stock of the old Vermont Central corporation (all of which he claimed to own by purchase on execution sale at a merely nominal price), launched out into schemes of the wildest speculation, giving notes in their names as receivers of the Court, and with its sanction (as they claim), and free of all personal liability. They bought the Stanstead, Shefford & Chambly Railroad in Canada, hired the Ogdensburg, Rutland and Missisquoi railroads, built the Waterloo tramroad, acquired the Northern Transportation Co., and in this way alone soon became involved in an indebtedness of about $5,000,000. These operations rendered the managers, in their alleged official capacity, bankrupt in 1872; though in their private capacity then, as now, they rolled in wealth.

Such are the debts of the management which, as the Supreme Court of Vermont now decides, you must either pay or lose your road, together with all the rent accruing, due to you since 1872, when these judicial speculators became bankrupt. The Supreme Court declared that these enormous debts constitute an *equitable* charge upon your railroad, greatly exceeding its entire value. In order that we may understand what this *equitable charge* is, Judge Redfield is kind enough to inform us. He says: "It *should* be *observed* that this equitable charge *does not arise from, or in any way depend upon, the contract relations* of the parties, but arises *solely from the act of the court of equity.*" It is a great relief to us to know that, in declaring this equitable charge and taking away your entire property to satisfy it, this Court is acting upon its own notions of justice and equity, and not upon any contract, consent or agreement whatever, express or implied, real or imaginary, made by or imputed to our corporation, whereby it ought to suffer this loss. The Judge, in his opinion, goes on to point out the ground of this *equitable charge*. We quote the following:

"Receivers and managers were appointed upon their (Canada Co.) application, and both roads *were seized and taken possession of by the Court.* * * It is difficult to see how either company can get their roads out of the possession of the Court without paying the receivers' debt. * * Nor do we think it strange that such property *voluntarily pooled and put to hazard* * * should be overwhelmed in bankruptcy and finally lost. Such is a common fate."

It thus appears that the decision is not put upon the judicial validity of the compromise decree, or anything done in pursuance of it, or any contract made directly by you or in your behalf; but it is put upon the ground that the debts were contracted within the scope of an administration of our railroad, accorded to the managers by the Court itself; and that as the Court was then, and now is in possession of our road (obtained originally in 1861 for a different purpose), yet the Court will see to it that the debts resulting from the speculation and gambling with trust property by the managers shall be paid before the property gets out of the hands of the Court—*i. e.*, it will enforce the debts against your property specially or *in rem*.

Among the debts included in the scope of this administration of an alleged "judicial trust," and as such approved and allowed by Chancellor Royce, is one of $457,500 (with several years interest thereon) contracted by the managers in the purchase of 9,150 shares of the capital stock of the Central Vermont Railroad Company, the corporate machine erected and used by these managers to hold on to your property indefinitely, free of all personal accountability therefor in any way, and so treated by the Court. Another item of the indebtedness of this judicially administered trust is one of $560,000, consisting of freight monies collected by the managers on account of the Grand Trunk Railroad, and never paid over except through notes of the managers given therefor, and now held by the Grand Trunk Company. These notes have been allowed by this Court of Chancery, and by the Supreme Court, as charges upon our railroad, with right of foreclosure, and a legal precedent thus furnished for the practice of robbing Peter to pay Paul.

The idea that the defendants in this case ought to lose their property, or have it devoted to the payment of the debts and losses of the managers of trust property, incurred by speculative operations, was first broached as a proposition of equity law by Senator Edmunds, in his closing argument for the plaintiffs. If there had been opportunity for reply, we might have said:

1st. We deny there is a particle of evidence in the case to that effect as against our corporation.

2d. There is no allegation in the bill of our complicity or participation in such speculative schemes, or that we could have gained a dollar thereby in any event.

3d. Our corporation has no legal capacity to join in any such speculative enterprises, or to put its property at risk in that way, had it so desired; and consequently no third party could have been misled into giving credit on our account, to the managers on that score, even if the managers had pretended to act as our agents in these matters, as they never did.

The Supreme Court has seen fit to adopt and make its own the false and preposterous theory of liability suggested by the plaintiff's counsel, and has in terms now declared itself willing to be held responsible for these wild and reckless schemes of the managers as a proper administration of judicial trusts confided to them by the Court of Chancery. It may well be doubted whether any other court of final resort would hold that an equitable mortgage can exist where there is no contract, either expressed or implied, or that the property of railroad corporations could become mortgaged by implication of law for the security of *ultra vires* liabilities, where even written mortgages can only be made by them when authorized expressly by statute, and for the purposes specified in such statute

If this decision shall stand and be enforced against your road by the decree of foreclosure, then you will have been deprived of your property by the Court without any contract liability and without compensation, and one of the express provisions of the constitution of Vermont, requiring compensation for property taken for public use even, will have been violated by its highest court, and if the Legislature had passed a law to the same effect with the decision of the Court, it would have been the privilege and duty of that Court to pronounce such act unconstitutional and void.

But who shall overrule the Supreme Court of Vermont in its decisions, however repugnant they may be to well-settled principles of constitutional law and of equity jurisprudence? No power for doing this is lodged anywhere. But it is in the power of courts of the United States to declare laws passed by State legislatures, impairing the obligation of contracts and proceedings of State courts which take away property *without due process of law*, unconstitutional and void—and when a state court seizes your property, or that of any other citizen, and, without the pretence of any contract by the owner for incumbering that property, declares it forfeited to a stranger, or many such, and proceeds to put such strangers in possession as for condition broken, when no mortgage debt is alleged and no breach of condition either alleged or shown, and no amount finally fixed as payable, we believe the United States courts will declare such acts to be done without such due process of law as is known to courts of equity or to English equity jurisprudence anywhere. Forfeitures are known to courts of admiralty in prize causes, and to courts for enforcing revenue laws and statute penalties; but they are, so far as we know, not found among the heads of equity jurisprudence. Two suits have already been brought in the United States courts, and are now pending, for the purpose of obtaining the decision of those courts, whether the state court of Vermont really possesses the power claimed by it for taking away your property in the manner above stated. One of these cases is brought and prosecuted by individual stockholders of our company in behalf of all others, and the other by the corporation itself. The case last named was heard on demurrer of the defendants to our bill only a fortnight since, and is now held by the Court under advisement.

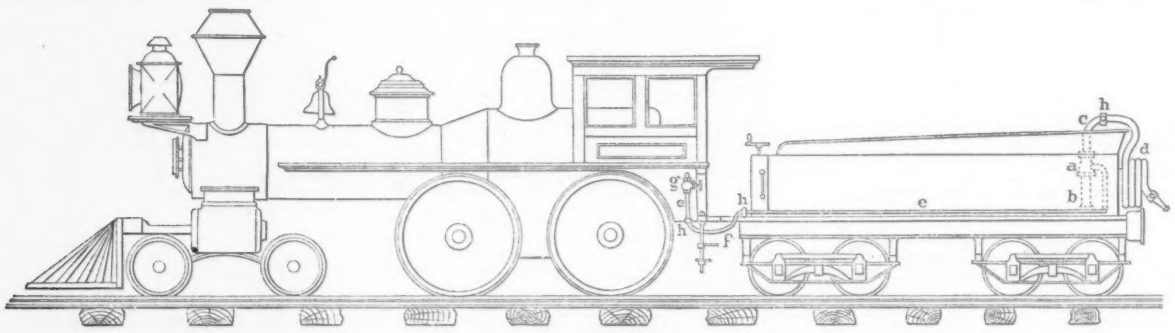


Fig. 1.

Steam Jet Pump for Extinguishing Fires on Trains.

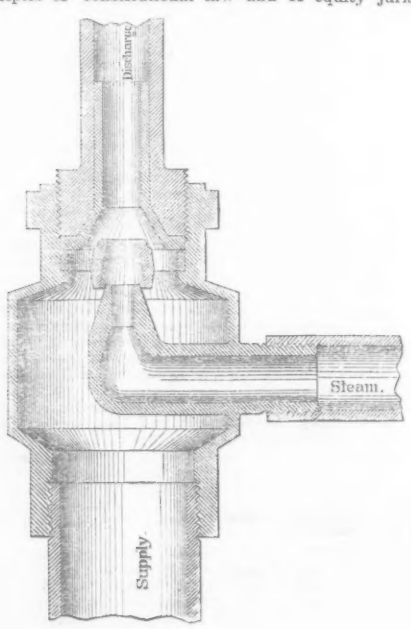


Fig. 2.

Steam Jet Pump or Fire Extinguisher for Locomotives.

The engravings represent an apparatus to be attached to locomotives and tenders for special use in case of fire on trains or buildings, etc., near the track. It consists of a form of injector, *a*, fig. 1, which is placed inside of the tank. This injector is shown in an enlarged section by fig. 2, from which its construction will be clearly understood. It is connected to the boiler by an inch steam-pipe *e*, fig. 1, and a hose *f*. Steam is admitted to it by a valve *g*. A pipe *c* carries the discharged water to a hose *d*, by which it can be conducted to any desired point.

The inventor says that with an inch steam-pipe the apparatus will throw a stream from a ⅝-in. nozzle at least 40 ft. horizontally, or readily over a passenger-car. "The essential feature," he says further, "in placing the pump for this service is to have it *within* the tank, and to have both the steam and discharge pipes to connect from *above*, by which arrangement all liability to freeze is avoided. The parts of the pipes projecting above the tank may be protected by a hood over them. All the parts inside of the tank are of non-corroding metal. The appliance in practice would probably be much oftener brought into use to protect property on the line of the road than in any fire that might be on the train to which the machine is attached.

Further information concerning this device may be obtained from Mr. W. H. Havens, of Paterson, New Jersey.

The Future of Mexican Railroad and Mining Enterprises.

The following article, written for the *Engineering and Mining Journal*, by W. B. Devereux, E.M., will interest many of our readers:

Since I sent you some notes from the city of Mexico, I have made extensive journeys through the belt of country between the city of Mexico and the Pacific coast. Although the primary object of my trip was the examination of mines, and the investigation of the conditions governing their development, I was much interested in studying the general resources of the country. After having traveled 1,500 miles in the saddle and on stage-coaches, and having visited places remote and unknown to the ordinary traveler, I find that the railroad question is, after all, the most important one for the mining engineer. Mines there are in abundance, and such as would be readily sought after in the Western territories; but the limiting conditions are such that the providing of better means of transportation is much to be desired. The absence of wagon-roads through large districts, and the impossibility of meeting a large increase of transportation by ordinary means, without vexatious delays and expense, at once emphasize the value which will be derived by Mexican mines from railroad transportation. The large number of animals released from through traffic will find employment at distributing points, thus providing for the increased demand consequent on new enterprises. The general advantages afforded to mines by the relative reduction of time and distance will be apparent. In certain parts of the country, wood and timber, and possibly coal, are abundant; and these necessities of mining and metallurgy can be transported to many districts now absolutely unproductive from the want of them. The railroad question in Mexico is one which gives rise to many diverse opinions and conclusions; and in view of its importance, I wish to give some results of my own observation, premising that I have no personal interest in any of the Mexican railroads, and have no wish to become their champion. Perhaps the most unfavorable conclusions, arrived at in a logical manner, are those recently enumerated by Mr. Bigelow in his paper in *Harper's Magazine*. Without discussing his views as regards the management of railroads in Mexico, and the comparative values of subsidies, to which question I paid no special attention, it seems to me that he has seriously underrated the capacity of the country to supply railroad traffic. What may be the future of the present roads, under conditions self-imposed, is one question; but whether American capital can build and operate roads in Mexico on a paying basis, is another, the answer to which may or may not be identical with that of the former. The latter question I had in mind while traveling 2,000 miles through the country into which the railroads are now extending. The belt of country across Mexico, from the Gulf to the Pacific, is essentially agricultural as far north as the more arid states of Zacatecas and San Luis. Traveling through this portion of Mexico, one cannot but be impressed with the great variety of its productions, which range from the tropical to those common to the more temperate portions of the United States. A simple enumeration of the chief of these will emphasize the statement that not only can Mexico produce all her necessities, but her luxuries as well. As we ascend from the sea-coast, we find cotton, sugar, coffee, tobacco, corn, wheat and barley, vegetables and fruit of all kinds, both temperate and tropical; cabinet and dye-woods, pine and oak, domestic animals of all kinds; and in addition iron, copper and the precious metals. The elevated portion of this belt, compris-

ing all but a strip on each coast of perhaps less than a hundred miles in width, possesses a temperate clime. Mr. Bigelow assumes that this elevation will not permit a future advance in civilization, using the negative argument that civilization can not be found elsewhere under similar conditions of altitude. It would, perhaps, be difficult to prove that the energetic life which exists at high altitudes in our own country may continue to exist without accessions of force from outside sources; but those familiar with the far West will certainly believe in the possibility. In Mexico, my own experience, at times involving excessive exertion, and that of foreign residents whom I met in various parts of the country, convinced me that not only was the climate of this part of the great plateau more than ordinarily healthy, but that it was favorable to both mental and physical labor. Production is, of course, limited by demand and facilities of transportation: but it is surprising to see what the country can and does produce. It is hardly possible to conceive how Mr. Bigelow could have fallen into so grave an error as his statement, "that all systematic and profitable agriculture is dependent on irrigation." In that part of the country of which he speaks, corn, the food of the people, the scarcity of which almost insures a famine, is raised without receiving a drop of water, except from the rains. Without exaggeration, I may say that I rode hundreds of miles over lands cultivated for corn, where irrigation was not possible. Were the people dependent on irrigation for their food, large areas of country would contain few inhabitants. Any crop that will perfect itself in the rainy season does not need irrigation; but irrigation does increase the producing power of the land by extending it through the dry season. In many sections, where the climate is otherwise suitable, wheat cannot be raised during the summer on account of the excessive rains, and in these it is raised during the dry season, and harvested a short time before corn-planting begins. I saw fields of wheat of several miles' extent, which were fine looking, and yielded a plump, clean berry. Visiting the markets in all the towns where I was able to stop, I invariably found many varieties of our ordinary vegetables in abundance. In Gaudalajara, particularly, the display of fruits and vegetables was especially fine. All through the west wheat and corn were sold at about the prices they would bring here. The abrupt variations of prices in different districts show the possibilities of traffic where the difference is greater than the cost of transportation.

Of course, the low country is unhealthy for a foreigner; but that is a condition which, though preventive of foreign labor, does not prevent foreign supervision.

Another erroneous statement in Mr. Bigelow's paper, which is emphasized as a special reason why railroads in Mexico cannot pay dividends, is in regard to fuel. He says: "The wood used by the companies now extending their lines from the city of Mexico costs $18 a cord, and is only ordinary pine at that." Riding over the Mexican Central on a locomotive, I saw quantities of wood delivered which the engineer told me cost $7 a cord at the station. The National is even more fortunate. Going over the mountains from Mexico, its road about 30 miles out runs into good pine and spruce forests; and I may state as a fact from my own observation, that, by starting a branch from the side of the mountain toward Toluca, and skirting around the head of the Llerma Valley, they could run 50 miles, at the least, through unbroken forests, which would supply wood, ties, and the best quality of pine and spruce trees of large dimensions in any quantity. I rode on horseback nearly all day through these forests, and could seldom see cleared land. At Toluca this timber belt is about 15 miles distant; and at several points as far as Morelia good timber can be got within a short distance. Whatever sins the National people are asked to shoulder, they certainly cannot be accused of building a railroad into a country where there is nothing to burn.

In a former letter I spoke of the great promise of local traffic for both the Central and National roads from the country tributary to their lines that I had visited. I have since followed the line of the National to Morelia, and the Central to Irapuato. A large portion of this country is exceedingly fine, especially the Llerma Valley, which is tributary to the National to Acamboro, and is then reached by the main lines of both roads. Around Morelia the country is not so well adapted for agriculture: mining is stagnant; and Morelia, in consequence, although a large and beautifully located city, is very quiet and dull, and awaits the railroad with much impatience.

Coal of good quality is brought into Morelia in small samples; but, as elsewhere, no systematic exploitation has been carried on. Beyond Morelia, I did not see the country, and do not know what its capacities are. At Irapuato, where I left the Central, I was still in a farmer's country, and was told that it was the same until the road divided into the northern and western branches. Farther west, both routes go down into Terra Caliente, with the corresponding change of climate and vegetation. The Sierra Cocomas, or coast range, lying between these two lines in Jalisco, is even better timbered than the range I have referred to. While there are immense pitch-pine forests, the mountains are more remarkable for their forests of oak. These surpass anything that I have ever seen for size and beauty. The white-oak forests of West Virginia somewhat resemble them, but the trees are inferior in size. I saw many trees with fine large trunks which did not bear a limb for sixty feet from the ground. There are two varities of oak prominent, which are named by the natives the *encino* and *roboso*. The encino yields the best charcoal for cupola furnaces, and the roboso makes the best timber. In many places the open character of these forests and the high spreading oaks gave them the appearance of immense parks. Whether the railroad routes cross the range through similar timber, I do not know; but from this region they could supply the barren mining districts with an incalculable amount of mining timber and fuel. Timber is carried by rail from Truckee, Nevada, into Central Arizona, a distance greater than any that would be necessary in Mexico.

The above statements of fact are not made with the idea that they will disprove the conclusions that Mr. Bigelow has enunciated, since he also uses other very convincing arguments based upon facts, the presentation of which my own experience does not enable me to criticise, and in any case the problem is one that does not admit of any but an experimental solution. It will readily be believed that were this country a part of the United States the railroad question would be a simple and satisfactory one. Such enterprise and eagerness as have been exhibited in opening up our own country far in advance of traffic, combined with consequent rapid development, would find in Mexico a no less promising country. But at the outset we are met with the fact that this country is not and never will be a part of the United States, and that while large enterprises will probably receive energetic supervision from foreigners trained to improved methods, the smaller and local developments must be left to the natives of the country. The ability of the latter to accomplish results cannot be disputed, and their skill in using crude appliances is marvelous. They will obtain the best possible result in a given process, but when they have reached the limits of adaptation for that process they stop. In other words, they seem almost entirely destitute of mechanical talent. Retarding their progress is the great and universal apathy which is exemplified by the constantly repeated *manaña* (to morrow). That this character is, to a certain extent, artificial and due to a long civil and religious servitude, coupled with enforced ignorance, seems to be an undisputed historical fact. Although these conditions are largely inoperative at the present time, yet a rapid change for the better cannot be expected. It must be gradual and the artificial elements in the character of the people will struggle against their own elevation.

A Belgian Railroad Accident.

On Sept. 12, when the Cologne and Brussels express was running down the incline at the back of Liège at full speed, and when near the station of Remicourt, the leading axle of the engine broke. The engine ran off the rails, jumping and floundering over the sleepers and ballast for about 100 metres, when the action of the automatic brake brought the train to a stand. The jumping of the vehicles was so severe that it was feared the train might altogether leave the rails, which, at the speed the train was traveling, would have caused the most terrible results, for it was running on a high bank close to a bridge when the accident happened. The train, however, like all the Belgian state trains, was fitted with the Westinghouse brake, and the passengers in this case felt that it had saved them their lives.—*London Engineer.*

ANNUAL REPORTS.

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Manchester & Lawrence	340	Worcester & Nashua	55
Massachusetts Minor R. Rs.	218	Wisconsin Central	370

Oregon Railway & Navigation Co.

At the close of the fiscal year on June 30 last this company operated the following transportation lines:

	Miles.
Ocean Division:	
San Francisco and Portland, Or.	670
Puget Sound Div.:	
Steamboat lines	238
River Div.:	
Portland and Eugene, Willamette River	172
Portland and Astoria, Willamette and Columbia	98
Portland and Lower Cascades, Willamette and Columbia	63
Upper Cascades and the Dalles, Columbia	51
Celilo and Priest Rapids, "	205
Texas Ferry and Lewiston, Snake River	78
	667
Railroad Div.:	
Bonneville (Lower Cascades) to Walla Walla	203
Walla Walla to Texas Ferry	56
Bolles Junction to Dayton	14
Whitman to Blue Mountain	14
Umatilla to Pendleton	44
Old Portage road, Lower Cascades	6
Oregonian Ry., leased, in Willamette Valley	150
	487
Total	2,062

Since July 30, the railroad line from Portland to Bonneville, 41 miles, has been completed.

The construction accomplished was less than expected, owing to the difficulties encountered on the Columbia River line, and to the transfer of part of the working force to the Northern Pacific road. There were 141 miles of new road graded and track laid on 131 miles of main track and 14 miles of sidings. Since the close of the fiscal year 41 miles of track have been laid. There are now under construction 130 miles of road from Pendleton to Baker City, and 46 miles from Walla Walla to Pendleton.

The railroad equipment consists of 55 locomotives; 22 passenger, 4 sleeping and 8 baggage cars; 1,272 freight and 12 caboose cars; 1 wrecking and 1 pile-driver car.

The general account, condensed, is as follows:

Stock		$16,200,000.00
Scrip certificates		1,200,000.00
Bonds		5,851,000.00
Insurance and renewal fund		173,302.69
Sinking funds		10,000.00
Bills, accounts and balances		1,040,743.83
Profit and loss		1,809,446.03
Total		$26,284,492.55
Property accounts	$23,643,087.40	
Stocks and bonds	645,710.00	
Insurance and renewal fund	151,816.25	
Sinking fund	14,977.90	
Supplies	372,734.87	
Bills, accounts and balances	1,312,240.20	
Cash	143,925.93	
		26,284,492.55

Stock was increased by $4,200,000 during the year, and a further increase of $1,800,000 is authorized.

The earnings of all the company's lines for the year were as follows:

	1881-82.	1880-81.	Inc. or Dec.	P.c.
Passage	$1,084,568	$755,739	I. $328,829	43.5
Freight	3,675,175	2,781,350	I. 893,825	32.1
Mail and express	96,932	49,909	I. 47,023	94.0
Miscellaneous	91,305	143,248	D. 51,943	37.1
Total	$4,947,980	$3,730,246	I. $1,217,734	32.6
Expenses	2,544,866	2,023,817	I. 521,049	25.7
Net earnings	$2,402,114	$1,706,429	I. $ 696,685	40.8
Per cent. of exps.	51.4	54.3	D. 2.9	

The increase was very large on all the company's lines, and was considerably in excess of that due to the increase in mileage.

These earnings were derived from the several divisions as follows:

	Ocean Div.	River Div.	Puget Sound.	R. R. Div.
Earnings	$998,540	$2,072,957	$144,598	$1,731,885
Expenses	605,104	1,134,569	101,888	703,305
Net earn.	$393,436	$938,388	$42,710	$1,028,580

The River Division showed a decrease, owing to the transfer of part of the Columbia River business from the boats to the parallel railroad line

The traffic of all the lines was as follows:

	1881-82.	1880-81.	Increase.	P.c.
Passengers carried	274,318	167,787	106,531	63.5
Passenger-miles	38,790,085			
Tons freight carried	1,139,248	623,025	516,223	82.8
Ton-miles	204,636,447			
Av. receipt:				
Per passenger-mile	2.79 cts.			
Per ton-mile	1.79 cts.			

There was a notable increase in immigration into Oregon and Washington, as shown by the passenger returns.

The income account, condensed, is as follows:

Gross earnings		$4,947,080.06
Walla Walla & Columbia River R. R.		129,194.11
Miscellaneous		51,530.60
Total		$5,128,704.77
Expenses	$2,544,866.43	
Taxes	67,674.57	
Interest	444,743.12	
Rent of Oregonian Ry.	112,760.40	
Dividends, 8 per cent	1,296,000.00	
Miscellaneous	13,600.96	
		4,479,645.48
Surplus for the year		$649,059.29
Issues of new stock		4,569,689.82
Sale of property		5,000.00
Total		$5,223,749.11
Sinking funds	$60,000.00	
Purchase of Puget Sound Nav. Co.	200,000.00	
" " Willamette Trans. Co.	200,000.00	
Real estate	275,359.37	
New construction	5,342,332.96	
New equipment	801,582.84	
		6,879,275.17
Excess of expenditures		$1,655,526.06

Against this excess, and to provide for further construction, additional installments amounting to $1,800,000 have been paid in since the close of the fiscal year, on the issue of 42,000 shares made last year. A further issue of 18,000 shares has been authorized.

It is estimated that about $5,000,000 will be needed to complete work now in progress, including the Baker City Branch and the extensive terminal improvements at Portland. The cost of the lines built last year considerably exceeded a careful preliminary estimate of their cost.

Of the 86 miles from Portland to the Dalles all but the first 12 miles out of Portland are very heavy work. The line is thus described in the Chief Engineer's report:

"The work on these 74 miles is heavier, I believe, than on any other continuous mileage of the same length in the United States. The rock work alone exceeded 4,000,000 cubic yards, while the embankments, principally composed of rock, exceeded 5,000,000 cubic yards.

"It will no doubt be surprising, even to engineers, that such immense masses could be moved in so short a time. The solution lies in the peculiar composition and nature of the rock. The rocky cliffs projecting into the river rise vertically from 100 to 500 ft. out of the water where the strong current, striking their bases, nearly always deepens the river very much. The rock is almost entirely basaltic, and splits vertically with considerable ease under the action of high explosives. By drifting in, at stated distances, a little below grade, we have thus been able, employing from 5 to 25 tons of powder, simultaneously exploded, to detach at times from 50,000 to 140,000 cubic yards, by single blasts, the detached rock, generally speaking, without much scattering, but well ground up, sinking close to the standing rock into the adjoining deep river, and thus forming the desired roadway without impeding navigation.

"The bridging (trestle work) on 56 miles amounts in lineal length to 8½ miles, and has consumed nearly 260,000 lineal feet of piling and 9,000,000 feet of timber.

"The rip-rapping of the banks has also been very laborious and costly."

Central, of Georgia.

The following preliminary statement is published for the year ending Aug. 31. The full report will not be ready for some time yet.

The income statement for the year is as follows:

	1881-82.	1880-81.	Inc. or Dec.	P.c.
Gross earnings	$3,476,308	$3,707,891	D. $231,583	6.2
Expenses	2,428,646	2,318,396	I. 110,250	4.8
Net earnings	$1,047,662	$1,389,495	D. $341,833	24.6
Net earnings steamships, wharves, etc.	341,645	301,121	I. 40,524	13.5
Total surplus	$1,389,307	$1,690,616	D. $301,309	17.8

Earnings and expenses include those of the bank as well as of the company's roads.

After deducting interest and rental charges, including interest on the dividend certificates issued last year, the surplus would be equivalent to about 5½ per cent. on the stock.

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EDITORIAL ANNOUNCEMENTS.

Passes.—*All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.*

Addresses.—*Business letters should be addressed and drafts made payable to* THE RAILROAD GAZETTE. *Communications for the attention of the Editors should be addressed* EDITOR RAILROAD GAZETTE.

Contributions.—*Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subject pertaining to* ALL DEPARTMENTS *of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which lwi be published*

Advertisements.—*We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay,* EXCEPT IN THE ADVERTISING COLUMNS *We give in our editorial columns* OUR OWN *opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.*

AMERICAN RAIL CONSUMPTION.

We have taken great pains for several years past to ascertain as nearly as possible the consumption of rails in this country for maintenance separately from that for new construction. The statistics have been sufficient for a close estimate, with one important exception: there has been no trustworthy statement of the mileage of new second track and sidings constructed each year, and this is not only an important element, but it is one which varies very greatly from year to year—fully as much, probably, as the construction of new railroads. A sudden and great increase in traffic, such as our railroads had after 1878, very soon chokes the lines and parts of lines which had approached the limits of their capacity, and a continuance of the rapid growth for a second or third year is likely to result in very extensive additions of second tracks and sidings on the more crowded lines. Let traffic fall off a little after such an expansion of traffic and of tracks to accommodate it, and very little work of this kind will be needed, and there will be less disposition to do it even were it needed, because earnings have fallen off with the traffic. But the record of these accessory tracks has been so manifestly erroneous that we cannot now say how much of them there has been built in any one year, nor even, with confidence, how much there is in the country.

The large table in Poor's Manual has a column for these accessory tracks, but the mileage reported has fluctuated so, being sometimes less in the table for one year than in that for the previous year, that it is certain that the figures under this head have been very imperfectly reported. The compilers of the Manual have taken more pains recently than in earlier years to secure complete returns, but this particular item is one which is not unlikely to be neglected by the railroad officers who make returns for their companies; and if made complete at any time, the record for that year would show an increase over the report of the previous year greater than the amount of construction of the year by all the omissions of that previous year. The actual figures given in the Manual for these tracks for successive years have been:

	1877.	1878.	1879.	1880.	1881.
Miles	18,360	18,100	22,817	21,977	26,211

In all probability some companies have reported these second tracks and sidings one year and not the next, and it is reasonable to suppose that the figures for last year (which probably represent the amount at the end of different fiscal years, the average of which would be about Oct. 1), are more complete than those for previous years, so that the reported increase of 4,234 miles over the previous year was not all built in one year.

The year 1880, and perhaps also the first half of 1881 was a time of an unusual amount of construction of tracks of this kind, many roads then having been crowded with traffic, and there being a prospect of a continuance of rapid growth. We doubt much, however, whether more than two-thirds of the 4,234 additions credited to 1881 were built in that year.

We cannot give so definite a statement as usual of the consumption for construction of new road in 1881, because we have not yet completed our record for that year. The mileage was, however, so great that we think we are safe in saying that it required as much as 960,000 tons (of 2,000 lbs.) of rails. Allowing 3,000 miles as the additions to second tracks and sidings, we will have to increase to 1,250,000 tons the quantity of rails required for new construction during the year. Now Mr. Swank reported the total consumption of rails in the United States in 1881 to have been 2,230,422 short tons. This would make the consumption for *maintenance* during the year 980,000 tons. But at the beginning of 1881, as nearly as we have been able to estimate, there were 11,384,000 tons of rails in the completed railroads of the United States. Then the consumption for maintenance in 1881 was at the rate of 8.61 per cent. of all the rails in track, against 7.65 per cent. in 1880. If we include only new roads in the new construction, and not new accessory tracks, then the consumption for maintenance and these accessory tracks was 1,270,000 tons, equivalent to 11.16 per cent. of the mileage in track at the beginning of the year. We have had to do this in the years previous to 1880 for lack of even approximately accurate statistics of accessory tracks. In this way we have constructed the following table, showing the consumption for new road, and for maintenance and construction of accessory tracks, in each of the last ten years, and the total weight of rails in tracks at the end of each year, in tons of 2,000 lbs.:

	Rail Consumption.			Aggregate in track Jan. 1.
	Construction.	Maintenance.*	Total.	
1872	740,500	790,350	1,530,850	7,671,500
1873	392,000	758,849	1,148,849	8,412,000
1874	192,000	645,995	837,695	8,804,300
1875	151,000	659,770	810,770	9,996,000
1876	231,000	648,916	879 976	9,147,000
1877	206,000	558,744	764,744	9,378,000
1878	360,000	522,700	882,695	9,584,000
1879	440,000	717,420	1,157,420	9,944,000
1880	688,000	986,235	1,674,235	10,384,000
1881	960,000	1,279,442	2,230,422	11,384,000
1882				12,634,000

* Including new sidings and second tracks of old roads, which required, perhaps, 192,000 tons in 1880 and 290,000 in 1881, but cannot be estimated for previous years.

With this consumption, the percentage of rails in old tracks required each year for maintenance and new accessory tracks has been:

Year.	Per cent.	Year.	Per cent.
1872	10.30	1877	5.92
1873	9.02	1878	6.56
1874	7.34	1879	7.24
1875	7.33	1880	9.52
1876	7.10	1881	11.16

For maintenance pure and simple we have shown above that the probable consumption was 7.65 per cent. of the rails in track in 1880 and 8.61 in 1881—the latter by allowing for the construction of 3,000 miles of accessory tracks during the year. If the whole addition of 4,234 miles in these tracks reported in the Manual was really constructed in 1881, then we should allow about 120,000 more tons for construction, and the consumption for maintenance was but 860,000 tons, and 7.55 per cent. of the rails in track at the beginning of the year, instead of 8.61.

Even if we make this minimum allowance for maintenance, we see that the percentage of renewals last year was greater than that for renewals and additions to sidings, etc., together in any of the six years previous to 1880, and much greater than it was in some years. Such a percentage indicates an average life of rails of 13¼ years, whereas in 1878 the renewals (without deducting for accessory tracks even) were at the rate required for an average life of 18 years.

At the time when the consumption for renewals was falling off so rapidly we called attention to the fact that the circumstances were such that for some time the requirements for renewals would probably be considerably less than the average. The railroads with heavy traffic had recently renewed their iron tracks with steel, and this steel would require very little renewal for some years. If its average life were 15 years, for eight or ten years after it was laid very few rails would have to be taken out, though the average consumption for renewals for the 15 years of its life would still be 6⅔ per cent. It would appear now that we have arrived at the time when it is necessary to make large renewals of the first steel tracks laid. At least this seems a rational explanation of the recent great increase in the percentage of renewals, though in addition we have had a larger traffic on many roads. On the contrary, we have been building so much new road of late that a much larger proportion than formerly of the rails in track are new, or too young to need much renewal. About 25 per cent. of all the railroad mileage now in operation in the United States is less than three years old, and should have required, so far, scarcely any renewals of rails. This tends to make the percentage of renewals on the older roads still greater than the average above indicated.

The *Engineering and Mining Journal*, in an article on this subject last week, makes statements of consumption for new construction considerably different from those given above, caused by assuming that the new road has the same proportion of second track and sidings as the old road, which is never the case. Very rarely indeed is a new road built with a double track, and its sidings are usually few and short. An allowance of 3 per cent. would probably be too large rather than too small for the second tracks and sidings of the average new road; while the last Poor's Manual reports that the aggregate of these tracks was equal in length to 25 per cent. of the total length of the railroads of the country.

Poor's Manual reports that there were 49,063 miles of steel track in the country at the close of 1881, which is 37 per cent. of the 130,535 total miles of track.

As this track is on the roads and parts of road where the traffic is heaviest, it is probable that fully two-thirds or three-quarters of all the traffic of the country now passes over steel rails; but, as we have seen, the additions to the mileage of steel have not lately prevented an increase in renewals.

The *Engineering and Mining Journal* makes an estimate of the probable consumption of rails this year, based on the assumption that we will probably complete 12,000 miles of new railroad during the year. It is unfortunately true that we are likely to build as much road as this, and the consumption for it will probably be something like 1,200,000 tons. For second tracks and sidings we should say that the consumption will probably be less than in either of the last two years, as the roads were more generally in condition to handle all the traffic that offered. Allowing for this, the *Journal's* estimate of 1,375,000 for construction is a reasonable one. But it allows only 900,000 for maintenance, while our calculations indicate that at least 860,000 and very likely 980,000 tons were required for that purpose last year, and that for the past three years the percentage of renewals has increased yearly. Doubtless more economy has been exercised this year than recently, as many roads have had their profits reduced and the new mileage this year was a still larger proportion of the whole than last year.

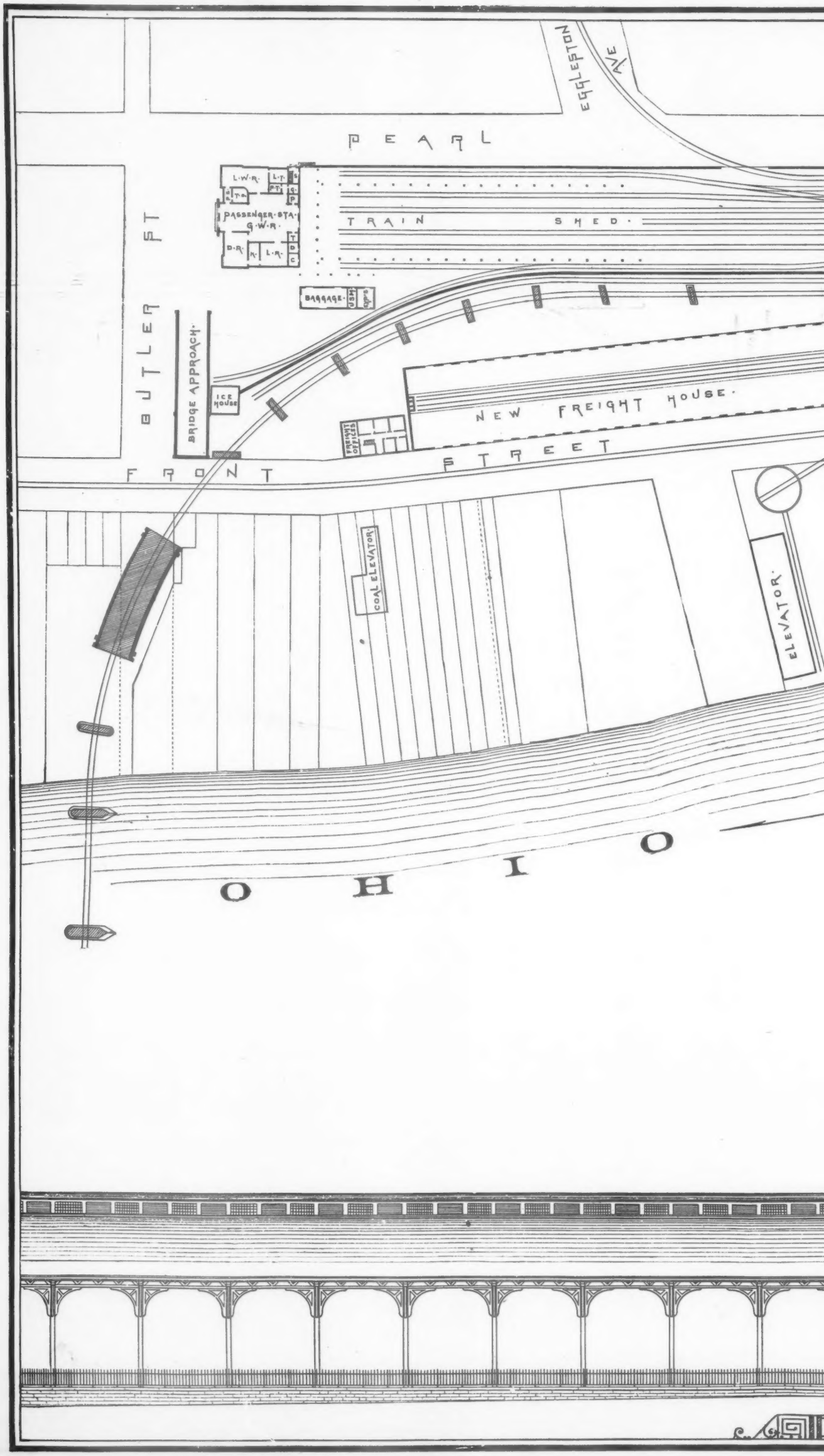
The *Journal* concludes that the demand will be sufficient to keep our steel mills busy, and as we are inclined to make the consumption this year greater rather less than its estimate, we shall not gainsay this conclusion. As for next year, however, we should hardly venture to guess.

A Locomotive Runner Burned.

A somewhat singular accident occurred on the Pennsylvania Railroad near Jersey City last Saturday, Oct. 21. The facts, so far as we are able to get at them, are, that as the train which left Jersey City at 1:15 was approaching the Hackensack bridge, Engineer Seig shut off steam while the furnace door was ajar, as soon as he shut off the door was thrown wide open, and a great volume of smoke and flame rushed out from the fire-box into the cab. The fireman escaped back into the tender, but the engineer was not so fortunate. Whether he remained to apply the brakes, or was unable to escape quickly enough is not clear from the information at hand. He was, however, severely burned about the hands and face, although we are glad to learn that his injuries are not as serious as reported by the daily papers. He succeeded in kicking out the door of the cab, and escaped in that way with his clothing all on fire. He jumped into the tank, through the man-hole, as quickly as he could, and thus put out the fire. The flame which poured outward from the furnace door set fire to everything combustible in the cab, and after the men escaped it was necessary to put out the flames with pails of water.

Some of the daily papers "worked up" the facts and added some imaginary circumstances which made it appear as though the engineer did one of the most heroic things on record. Thus one of them in describing it said:

"The smoking car was crowded and panic was created when smoke and flame began to pour in from the engine through the front door, when the train was going at the rate of 40 miles an hour, near Hackensack. The next moment the engineer and the fireman rushed into the car and the train was left entirely without control. An attempt was made to get at the air-brakes in the rear of the train, but the block


EGGLESTON AVE
PEARL
BUTLER ST
L.W.R.
PASSENGER STA.
G.W.R.
D.R.
L.R.
TRAIN SHED
BAGGAGE
BRIDGE APPROACH
ICE HOUSE
NEW FREIGHT HOUSE
FREIGHT OFFICES
FRONT STREET
COAL ELEVATOR
ELEVATOR
OHIO

KILGOUR ST

P T R E E T

MARTIN

OLD FREIGHT HOUSE · RETAINED ·

F R O N T

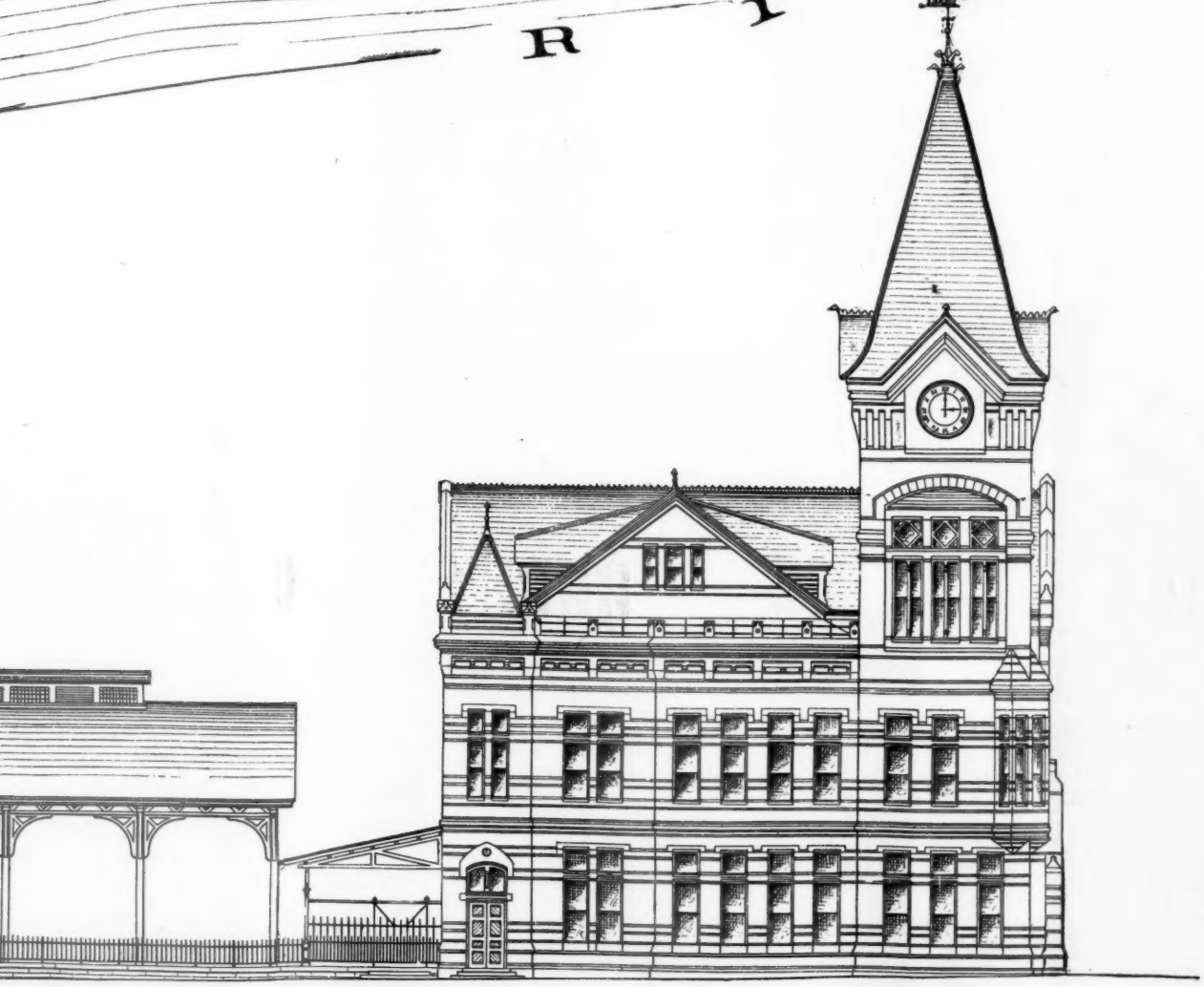
OLD PASSENGER STATION.
CONVERTED INTO FREIGHT HOUSE.

CINCINNATI WATER WORKS.
PUMP HOUSE.

MALT HOUSE

ELEVATOR.

R I V E



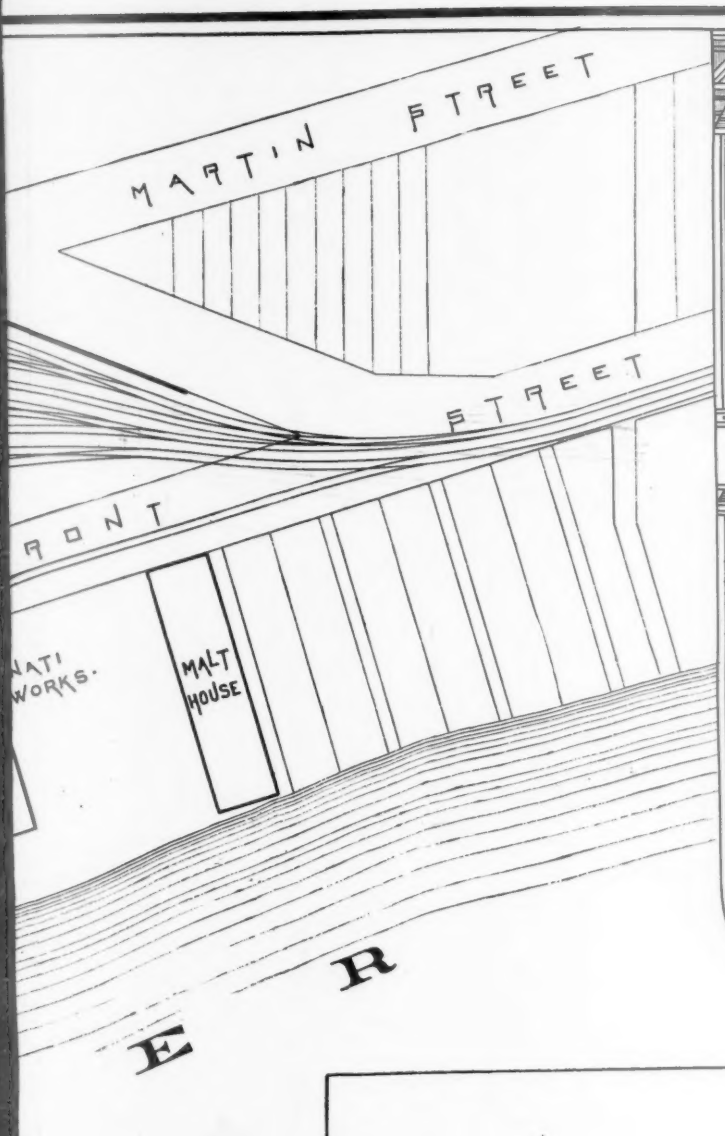
···PEARL·ST·ELEVATION···SHOWING·PORTION·OF·TRAIN SHED···

PLAN OF NEW PASSENGER AND FREIGHT YARDS OF P.C.&St.L.RY. AT CINCINNATI OHIO

SHOWING LOCATION OF BUILDINGS &C

WITH ELEVATIONS OF NEW PASSENGER STATION

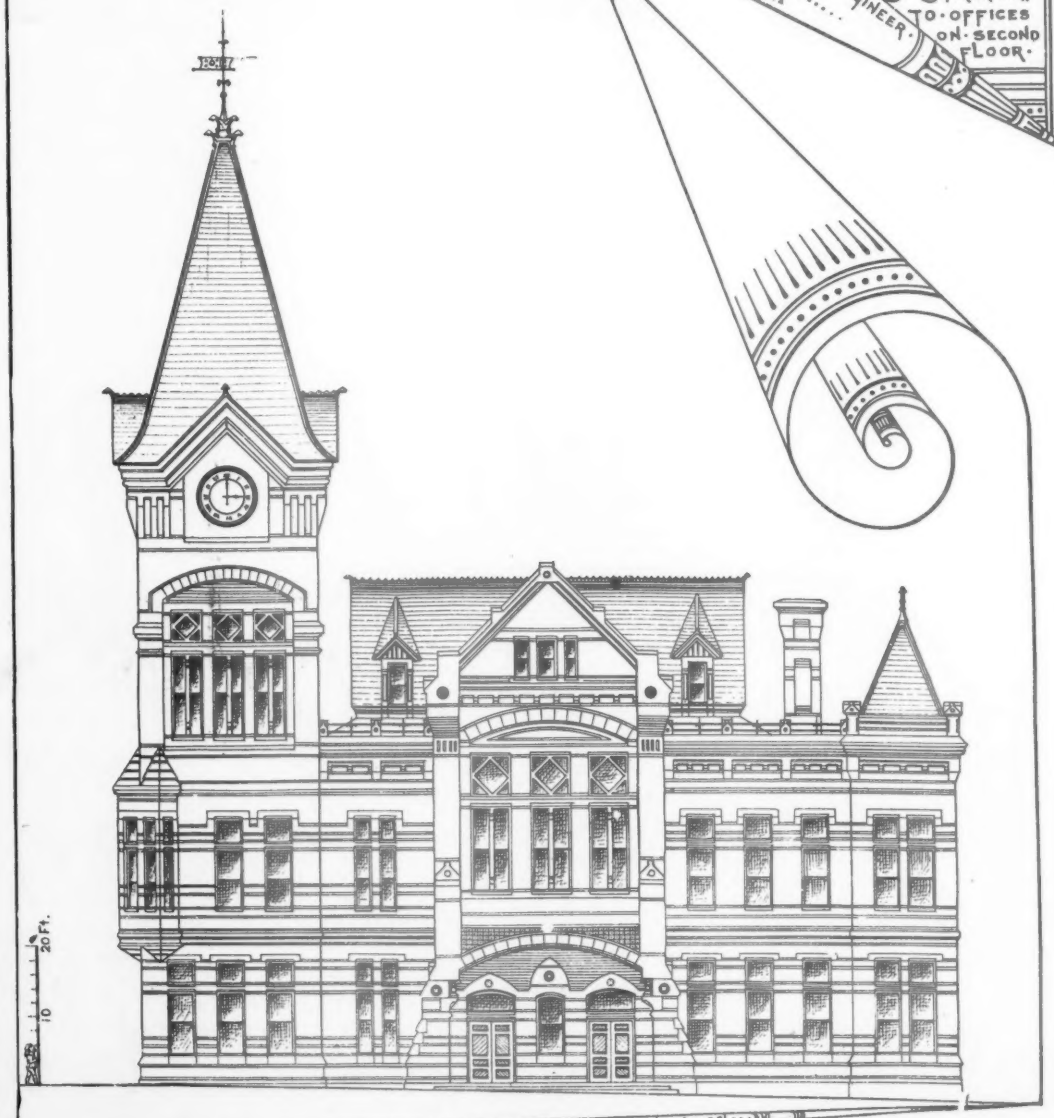
SCALE 1 INCH = 80 FT.



REFERENCE TO GROUND PLAN OF NEW PASSENGER STATION.

G.W.R.—GENERAL WAITING ROOM 88.2 x 52.6
L.W.R.—LADIES WAITING ROOM 53.6 x 27.8
D.R.—DINING RM. L.R.—LUNCH RM.
K.—KITCHEN T.O.—TICKET OFFICE.
L.T.—LADIES TOILET ROOM.
P.P.—PULLMAN TICKET OFFICE.
G.—GENTS W. CLOSET
T.—TELEGRAPH OFFICE
P.—STA. MASTER
C.—CONDUCTORS RM.
P.—PACKAGE RM.
PS.—PASSAGE
S. STAIRWAY TO OFFICES ON SECOND FLOOR.

M.J. BECKER CHIEF ENGINEER P.C.&St.L.RY.



BUTLER ST ELEVATION S.J. HALL ARCT. & DEL.

S.J.H. 1882.

of passengers was too great. Without hesitation Engineer Seig rushed through the smoke and flame back to the engine. The engineer's cab was compleiy enveloped in flames. Nearly a minute passed and then the train came to a stop on the bridge over the Hackensack River, and the passengers knew that the engineer had put on the air-brakes and reversed the engine."

We regret the necessity of spoiling so nice a story, but, although we do not doubt that the engineer is a very brave man, yet the fact is he did not rush back into the flames, but got out as quickly as he could, whether before or after he applied the brakes is not clearly established. He had shut off steam before the fire poured out of the furnace door, and if he had again opened the throttle-valve the escape of fire from the furnace door would have been instantly arrested.

The papers say that "the accident was caused by the blow-back forcing the flames out of the furnace when the door was open." The engine is equipped with Ashton's blow-back safety valves, which were illustrated in the *Railroad Gazette* of Feb. 18, 1881. It will be remembered that with this arrangement the escaping steam is conducted by a pipe from the safety-valves to either the tank or to the smoke-stack. On the engine on which the accident described occurred, the steam is conducted to the smoke-box, and it there escapes from a pipe with a number of small holes in it. The currents of steam from these holes are not directed up the chimney, because if they were they would produce a draft and stimulate the fire at the very time when it is desirable to have the heat diminished. Unless the pipe and the openings from which the steam is discharged are very carefully adjusted, it is evident that the escaping steam will produce a pressure in the smoke-box which is liable to force its way backward through the tubes, as well as upward out of the chimney. From the reports we have received, this is apparently what occurred on the engine referred to. If this hypothesis is the correct one, it does not indicate any defect in the blow-back valve, or its principle, but it does show that some care should be taken when the escaping steam is discharged into the smoke-box, that it does not produce a backward draught through the tubes.

The accident, or rather the fact that the results of it were not more serious, is another indication of the value of that feature in the Westinghouse continuous brake which makes it possible to apply it from any part of the train. We do not know what would have happened if the train had not been quickly stopped. It may be that the road was clear in front of it, and no disaster would have occurred but if the Hackensack draw-bridge had been open, as it often is, the most terrible consequences might have ensued. From what did occur it is apparent, though, that it may at times be of the utmost importance to be able to apply the brakes from any part of any car. This is the object of the safety cord used in connection with the Westinghouse brake, which extends from one end of the train to the other. After the Spuyten Duyvil accident on the New York Central & Hudson River Railroad, which was supposed to be caused by a drunken passenger pulling the safety cord, the managers of that road took steps to remove all these cords, and in place substituted a lever, attached to the outside of the saloon, by which a valve, communicating with the brake pipe, could be opened and the brakes thus be applied. A whistle in the inside of the car was also connected to the brake pipe, so that when the valve is opened the whistle is blown, and, of course, attracts attention to the person who moves the lever, and thus leads to the detection of the offenders in case the brake is applied unnecessarily. The whistle, no doubt, is a useful device, and a great safeguard against the misuse of the brakes, but it seems to be questionable whether it is best so to arrange the appliances that the brake can only be applied from one part of each car. The probability is that in case of an accident there would be very few persons in a car with sufficient knowledge or presence of mind to apply the brakes instantly. If such a person is at one end of a car full of passengers, and the lever by which the brakes can be applied is at the other end, it would be impossible for him to get to the lever, and he would thus be powerless to apply the brakes, although the means of doing so are in sight. Foreigners nearly all have a superstition that a bell-rope will be maliciously interfered with and, therefore, cannot be used. The same superstition seems to prevail here regarding the safety brake cord. It is true that the cord is sometimes accidentally interfered with by hanging umbrellas or canes on it; but this could be prevented by protecting the cord with some kind of a guard, so that the cord would still be in sight and within reach without being available for the uses of a hat or umbrella rack.

It seems as if every required protection would be afforded if the safety cord were left and a whistle attached to the brake-valve, and suitable explanatory notices posted describing the uses of the cord, with a warning that if pulled a whistle will be blown. The danger of maliciously interfering with it could also be indicated to passengers in the notice, and train-hands might be instructed that if a person who did so were detected and caught, he should be put under the spout at the next water station for ten minutes and the water turned on. This, besides being useful as a preventive of such malicious interference, would afford delightful entertainment to the passengers.

The accident described showed incidentally that the proper arrangement of the safety cord, or the valve to which it is attached, is important enough to merit the attention and discussion of railroad managers and employés, as being able to reach them may sometimes make the difference between the occurrence and the prevention of very serious accidents.

Advance in West-bound Rates.

West-bound rates will be advanced Nov. 1 very nearly to the schedule in force before the railroad war broke out in the summer of last year, which was the lowest that had ever been agreed upon. The rate in force since June has served as a stepping stone between the absurdly low rates of the railroad war and the tariff which preceded it.

The rates per 100 lbs. from New York to Chicago agreed upon at different times since the trunk lines combined have been:

	Class.					
	1.	2.	3.	4.	5.	Sugar and molasses.
July 1, 1877	100	80	60	45	..	..
Feb. 14, 1878	75	60	50	40	30	25
Aug. 6, 1881	45	32	26	19	..	..
Contract rates, 1882 to June 30	30	25	20	15	..	..
July 1, 1882	60	50	40	30	..	25
Nov. 1, 1882	75	60	45	35	..	..

The fifth class was not introduced until the fall of 1879, when great quantities of imported scrap-iron and old rails were shipped to Western iron works. This class included little but these articles, the traffic in which is but trifling now.

The new schedule differs from the schedule that prevailed for the three and a half years before the breaking out of the railroad war of last year only by making the fourth-class rate 35 instead of 40 cents, and abolishing the special rate on sugar and molasses. The 1878 rate was maintained without change winter and summer, and there was substantially no complaint against it. But there would doubtless have been a great diversion of shipments of sugar and molasses to the canal in summer but for the special rate on these goods, while the special rate was not needed in winter to save that trade, which can well afford to pay fourth-class rates, but is able to take advantage of slower and cheaper transportation without much disadvantage.

The tariff of August 6, 1881, was meant to bring down the schedule rates to the level of the charges then made at the beginning of the railroad war. It was not observed, except when convenient, and served rather as a maxmum limit to charges to the several competing points than as a regular schedule. The lines to interior points south of the lakes were able to use it for traffic which the more Northern roads do not much compete for. The larger part of the traffic to the more important Western cities in the first half of this year was carried at what we have given as contract rates: but the tariff of August 6 was nominally in force, and its rates were applied, it is understood, by the Baltimore & Ohio and Pennsylvania, and perhaps by other roads, so far as possible, which was chiefly to the smaller interior towns of the West.

A considerable difference in west-bound rates is not likely to make a great difference in the *aggregate* amount of west-bound shipments, but it may very materially affect the amount that goes by water and by the more indirect rail routes, like the New London route, and the Chesapeake & Ohio, which are not in the pool. These latter routes have now agreed to maintain certain fixed differences, and it may be said that the shipper will be no more anxious to save $2 on a rate of $15 per ton than to save $2 on a rate of $13. This may be true, but the carrier is a great deal more anxious to get shipments at $13 than at $10 a ton, and when the rates are higher the indirect routes will work harder to get business, because it pays them better. The July tariff, when the differentials were applied, left very little temptation to the New London route to solicit third and fourth-class freights and sugar, which form the great bulk of the whole. Of the total shipments for more than four months previous to June last, 69½ per cent. was fourth-class (which then included sugar and molasses), but the class with the next largest amount was the first, with 21½ per cent. of the whole. But with an advance in the rate, freight that by the old rate was unprofitable to the long route, and which therefore it made no effort to get, at once may become profitable, and, if so, is eagerly sought for.

The shipments under the July tariff have been quite satisfactory—not quite so large as last year, when rates were too low to leave anything to the canal or to the long routes, but still not very much less, and under this tariff the canal, apparently, has carried very little more of the west-bound freight for which it competes with the railroads, than last year.

The new rates are those which were quite strictly maintained when the merchandise business of New York and the seaboard cities was most prosperous, and are still lower than are known any where else in the world for similar service. Whether, under the circumstances, they are more profitable than a somewhat lower rate we do not feel certain; that will depend chiefly upon the effect on shipments by the long routes outside of the combination. We do not believe that there will be any reduction of any important traffic by the advance, whatever the diversion may be. If there is it can be remedied by putting the articles whose shipment is checked into a new class at lower than fourth-class rates. Certainly a very large part of the shipments of goods to the West will never feel the highest of the new rates.

September Acciden's.

Our record of train accidents in September, given in full on another page, shows for that month a total of 153 accidents, in which 34 persons were killed and 136 injured. The list includes 70 collisions, in which 17 persons were killed and 58 injured; 78 derailments, in which 17 persons were killed and 68 injured, and 5 other accidents, in which 10 persons were injured.

In 22 of these accidents one or more persons were killed; in 34 others there was injury, but not death, leaving 97, or 63.4 per cent. of the whole number, in which no serious injury to persons is recorded.

Eighteen of the killed and 68 of the injured were railroad employés; 16 of the killed and 68 of the injured were passengers or others riding on the trains. Employés made up 52.9 per cent. of the killed, 50 per cent. of the injured, and 50.6 per cent. of the whole number of casualties.

As compared with September, 1881, there was an increase of 9 accidents, a decrease of 22 killed, and a decrease of 91 injured. There was an absence of the fatal accidents which have generally marked the excursion season.

These accidents may be classed according to their nature and causes as follows:

COLLISIONS:		
Rear collisions		49
Butting collisions		18
Crossing collisions		2
Passing collision		1
		— 70
DERAILMENTS:		
Broken rail	1	
Defective rail-joint	1	
Broken bridge	4	
Spreading of rails	8	
Broken axle	8	
Broken wheel	3	
Wash-out	4	
Accidental obstruction	3	
Cattle on track	6	
Misplaced switch	17	
Open draw	2	
Malicious obstruction	1	
Unexplained	20	
		— 78
Boiler explosions		3
Broken connecting rod		2
Total		153

Ten collisions were caused by trains breaking in two; four by mistakes in train orders or failure to obey them three by misplaced switches; three by runaway trains; two by failure to use signals; two by cars blown or run out of a siding; one by a wreck of another kind, and one by a flying switch.

Of the four broken bridges, one had been partially burned; one was a temporary trestle bridge put up until a permanent structure could be erected, and the others were wooden bridges of no great size.

A general classification of these accidents is as follows:

Causes.	Collisions.	Derailments.	Other.	Total.
Defects of road	..	14	..	14
Defects of equipment	10	13	5	28
Negligence in operating	60	19	..	79
Unforeseen obstructions	..	11	..	11
Maliciously caused	..	1	..	1
Unexplained	..	20	..	20
Total	70	78	5	153

The proportion of accidents due to negligence in operating was 51.8 per cent. of the whole number. Under this head are included only those accidents which might easily have been prevented by better discipline or greater care in running trains.

There were 98 accidents in daylight, 51 at night, and in 4 cases the time is not definitely fixed.

A division according to classes of trains and accidents is as follows:

Accidents:	Collisions.	Derailments.	Other.	Total.
To passenger trains	2	25	3	30
To a pass. and a freight	16	..	..	16
To freight trains	52	53	2	107
Total	70	78	5	153
Casualties:				
Killed by	17	17	..	34
Injured by	58	68	10	136
Total	75	85	10	170

According to this statement accidents happened to 223 trains, of which 48, or 21.5 per cent. of the whole number, were passenger trains, and 175, or 78.5 per cent., were freight trains.

The weather of the month was not very unfavorable.

There were some exceptionally heavy rain storms, but they were confined to comparatively small districts, and do not seem to have caused as many accidents as might have been expected.

The number of collisions was very large and without apparent cause. It is true that there was a large traffic on many roads and probably some crowding of trains, but not enough to be the cause of any large increase in accidents. Broken couplings caused their full share of trouble, and the month is another especial reminder of the necessity of improvements in our coupling arrangements.

A very disgraceful feature of the record is the large number of misplaced switches. No less than 20 accidents—three collisions and 17 derailments—resulted from this cause. There seems to be little hope of improvement in this respect.

It is possible that the great increase of accidents in the last two years is due in part to the employment of an inferior class of men. When the building of new roads is going on as rapidly as it is at present, there must be a demand for more men, and it is necessary in many cases to employ new and unskilled men. On many roads, however, it is the fact that the exercise of too much economy in wages has driven away the better class of men, and left only the inferior hands, with a liberal mixture of untrained men.

When there are many opportunities for employment at good wages in other occupations, the railroads are liable to lose their most trustworthy men unless they increase their wages or otherwise make it for the men's interest to stay with them. Too low wages is very unwise economy, as some railroad officers have learned from experience.

The worst accident of the month was undoubtedly caused by the employment of cheap men and the neglect or refusal to provide efficient signaling apparatus.

For the year ending with September, the record is as follows:

	Accidents.	Killed.	Injured.
October	131	31	133
November	133	50	120
December	113	36	96
January	137	41	198
February	88	23	69
March	99	29	101
April	81	18	61
May	94	24	86
June	72	35	193
July	92	18	56
August	139	46	218
September	153	34	136
Total	1,332	385	1,467
Totals, same months, 1880-81	1,481	435	1,691
" " " 1879-80	937	246	961
" " " 1878-79	779	200	689

The averages per day for the month were 5.10 accidents, 1.13 killed and 4.53 injured; for the year they were 3.65 accidents, 1.05 killed and 4.02 injured.

The average casualties per accident were, for the month, 0.222 killed and 0.889 injured: for the year, 0.289 killed and 1.101 injured.

The averages per month for the year were 111 accidents, 32 killed and 122 injured, against similar averages of 113 accidents, 36 killed and 141 injured in 1880-81: 78 accidents, 25 killed and 80 injured in 1879-80; 65 accidents, 17 killed and 57 injured in 1878-79.

The number of accidents in September was the greatest of any month in the year, but the number of killed was exceeded in five other months, and that of injured in three others. There were very few accidents with any considerable number of casualties.

Superintendent Toucey and the Newspapers.

The daily papers of New York, following the lead of the *World*, have within a few days past been publishing announcements that Mr. Toucey has been "removed from the charge of the New York Central & Hudson River Railroad in consequence of recent accidents on that line." Such reports, with such a cause assigned for the removal are, of course, very damaging to the reputation of a railroad officer. The fact, too, that there is not a single word of truth in the report makes it by no means harmless. It will no doubt be copied far and wide, and the reputation of a faithful and competent railroad officer will be dragged in the mire as carelessly as though its owner had no more concern about it than a ward politician has of what the Young Men's Christian Association thinks of him. Some of the papers, like the *Evening Post*, have written flippant comments thereon, and have thus entertained their readers by condemning a man for leaving undone things which he had no power to do, or which would have been useless if done. The *Post*, for example, after publishing the report of Mr. Toucey's removal says:

"This fact may be taken as a gratifying indication that Mr. Vanderbilt, when he damned the public right and left for objecting to railroad collisions, was only cracking one of his jokes, and that the 'sober second thought' which comes even to the greedy and cruel monopolist as it does to the wayfaring man, convinced him that it would be for his interest to take some other means to make the down-trodden and maimed passenger contented with his lot"

In other words, the *Post* assumes that Mr. Vanderbilt dismissed Mr Toucey from the responsible position which he still holds in order to appease the public indignation over the Fourth avenue tunnel accident.

The *Tribune*, however, is more specific. It not only condemns the man whose reputation it seems to have no hesitation in injuring, but it specifies exactly wherein he is to blame for the occurrence of that lamentable accident. It condemned him for not having two signal men in the Ninety-sixth street station, and said: "Even now he seems to be unaccountably oblivious to the duties of his position, for he persists in declaring that one man is sufficient for any signal station." This is an amusing example of the justice of the verdicts rendered by a "trial by newspaper." The judge and the jury in this case apparently acted on the principle that any knowledge of the subject would create prejudice. A little inquiry would have revealed to the editor that no where in the world are two signalmen considered necessary in an ordinary signal station. If persistance in the declaration "that one man is sufficient for any signal station" makes a railroad superintendent "unaccountably oblivious to the duties of his position," then is the whole management of the Pennsylvania, the Reading and in fact all the prominent railroads of this country, in that condition, because in none of their signal stations, excepting at some junctions and other places where the traffic is concentrated, is there more than one signal man kept on duty at a time. Not only is this true, but on the crowded lines of Great Britain the managers are equally oblivious to their duties, and are likely to remain so until instructed and enlightened by the editor of the *Tribune*. They all with remarkable unanimity "persist in declaring that one man is sufficient." In fact hundreds, perhaps thousands, of such stations are worked daily, and have been, some of them for twenty or thirty years, and the necessity for having two men was never known until the astute *Tribune* writer made the discovery. Condemning a railroad superintendent for this reason is in fact the sheerest nonsense, and if it were not coupled with an attempt to blast the reputation of a capable man it would only deserve to be laughed at and quoted as an example of the kind of mistakes which the editors of great newspapers may make when they write about subjects of which they are ignorant.

The *Tribune*, however, will not let its victim off on one count. It says that he "admitted that the signal arrangements for the side-track were not complete, and he also admitted that it might be advisable to light the tunnel. These admissions alone are sufficient to convict him of great negligence." It would be interesting to know what greater reason there is for lighting the tunnel than there is for lighting the whole line of a railroad on a dark night. At night the rear end of a train is made visible by tail-lights. The same method is available in the tunnel. It may be said that the tunnel, unlike the line of the road, is often obscured with smoke. If it is, what is the use of lighting it? Is there any light known that will make smoke transparent? In fact, tail-lights would be less visible through the smoke, if it was illuminated, than they would be if it was dark. The clamor in the newspapers about lighting the tunnel is absurd, and to accuse a railroad manager of "great negligence" for not lighting it is a pitiable display of ignorance by the editor of an influential newspaper.

The third charge on which Mr. Toucey is "convicted" is that "the signal arrangements for the side-track were not complete." The question comes up, Had he the power or the authority to complete them? If he had not, it seems like condemning a man for what he could not help. Equipping a line of railroad with the most approved signalling appliances is an expensive business, and few, if any, railroad superintendents have authority to expend the capital of the companies by which they are employed. To say that a man is guilty of "great negligence" because he did not do what he had no right to do, falls a long way short of a conviction of "great negligence."

The coroner's verdict on this point is very different from that of the *Tribune*. The language of the jury was:

"We find that the New York Central & Hudson River Railroad Company is guilty of gross and criminal negligence in failing to provide in said tunnel sufficient appliances for the signalling of trains."

It is the company and not the Superintendent that is held responsible. It is true, of course, that to whatever extent the action of the company was influenced or controlled by the Superintendent, to that extent is he responsible for the absence of proper signals; but thus far no evidence at all has been brought out to show that he was or was not responsible for its neglect.

Most of the wholesale condemnation of Mr. Toucey has been due to ignorance of the subjects on which the writers have expressed opinions so freely, and has been very unjust to a faithful and intelligent railroad officer, and therefore we defend him. The reports of his removal are entirely untrue. There has been no change at all in his jurisdiction. He remains, as heretofore, Superintendent of the New York Central & Hudson River Railroad and of the Grand Central Depot. The only fibre of truth in the reports circulated is that he has re-employed Mr. Franklin as his assistant in charge of the depot, which includes the tracks in Fourth avenue to Harlem River.

HUNGARY had an extraordinary fine crop of wheat this year, and its exports have been unusual, and have greatly added to the traffic of the Hungarian and Austrian railroads. The exports go in almost every direction; even what is destined for England may either go north to North Sea ports or south to the Adriatic, and perhaps the chief market is westward, in Switzerland and South Germany. As evidence of the greatness of the traffic it is reported that a single railroad with three lines crossing the Bavarian frontier, carried from Vienna to these frontier stations in August about 10,000 car-loads. An Austrian car has capacity for 22,000 lbs., equal to 367 bushels of wheat. This would be a very respectable month's business for one of our Northwestern roads, but sometimes exceeded. Thus in 1880 the Chicago, Burlington & Quincy delivered 5,279,000 bushels of wheat and corn in Chicago in June, 5,089,000 in July, 5,847,000 in August, 5,648,000 in September, and 5,056,000 in October. No other railroad brought so much as 3,500,000 bushels to Chicago in any one month of that year, however. In 1881 the deliveries at Chicago by the Chicago & Northwestern were 4,577,000 in June and over 3,500,000 in the other months. The Empress Elizabeth (Austrian) road is a carrier more like the Michigan Central than any road west of Chicago, however; that is, it carries from a central receiving point towards the consumer. In 1880, when rail rates were maintained, no road carrying east from Chicago carried as much as 2,500,000 bushels of grain thence in any month, and the aggregate carried by all the roads exceeded 4,000,000 bushels in but one month. Last year, when for six months rates were below cost, no one road carried from Chicago more than 2,200,000 bushels in any one month.

Thus we may acknowledge the August grain traffic of the Empress Elizabeth Railroad to have been large in the American as well as the European sense of the term.

Record of New Railroad Construction.

This number of the *Railroad Gazette* contains information of the laying of track on new railroads as follows:

Chicago, Milwaukee & St. Paul.—A branch is completed from Northfield, Minn., east to Cannon Falls, 15 miles.

Cincinnati, Wabash & Michigan.—Extended northward to Benton Harbor, Mich., 13 miles.

Cleveland, Delphos & St. Louis.—Extended from Bluffton, O., east to Mt. Blanchard, 12 miles. Gauge, 3 ft.

Illinois Central.—Track is laid on the *Coal Branch* from Buckingham, Ill., north to Essex, 9 miles.

Milwaukee, Lake Shore & Western.—The *Pelican Rapids Branch* is completed from Monico, Wis., west to Pelican Rapids, 15 miles.

Pensacola & Atlantic.—Track laid from the Apalachicola River, Fla., west 21 miles. Gauge, 5 ft.

Sabine & East Texas.—Extended from Taylor's Bayou, Tex., south to Sabine Pass, 14 miles.

Texas & St. Louis.—Extended from the Leon River to Gatesville, Tex., 5 miles. Gauge, 3 ft.

Toledo & Indianapolis.—Track laid from Toledo, O., south 12 miles.

Union Pacific.—The *Colorado Central Division* is extended from Georgetown, Col., to Bakerville, 8½ miles. Gauge, 3 ft.

This is a total of 124½ miles of new railroad, making 8,314 miles thus far this year, against 5,639 miles reported at the corresponding time in 1881, 4,388 miles in 1880, 2,739 miles in 1879, 1,635 miles in 1878, 1,668 miles in 1877, 1,875 miles in 1876, 986 miles in 1875, 1,363 miles in 1874, 3,075 miles in 1873, and 5,675 miles in 1872.

AN ENGLISH RAILROAD WAR is announced, in consequence of the opening of a new route between London and Sheerness, by the completion of a branch of the Southeastern Railway to the Hundred of Hoo, opposite Sheerness, on the Thames at the mouth of the Medway. The London, Chatham & Dover had had the only station at Sheerness, which is about 50 miles from London by its line. Its rates had been (reduced to American currency):

	Single. Class.			*Return.* Class.		
Trains:	1.	2.	3.	1.	2.	3.
Ordinary	$2.28	$1.56	$0.94	$3.42	$2.40	$1.52
Cheap fast	1.44	1.08	0.78	2.16	1.63	1.20

That is, the ordinary single ticket rate was about 4½ cents a mile for the first class, 3⅛ for the second, and 1⅞ for the third; but by the "cheap fast" train the rates for single tickets were 2⅞ first-class, 2⅛ second class, and 1½ third-class.

The Southeastern line reaches Sheerness by a ferry of perhaps three miles across the Medway, the fares on which are 6 cents single and 8 cents for return ticket. It made the following rates to Sheerness:

	Single. Class.			*Return.* Class.		
	1.	2.	3.	1.	2.	3.
Ordinary	$1.92	$1.44	$0.84	$2.88	$2.16	$1.44
Cheap fast	1.44	1.08	0.72	2.16	1.68	1.20

The reduction for the trip of about 50 miles was thus 36, 12 and 10 cents on ordinary single fares, and 54, 24, and 8 cents on ordinary return tickets; by the "cheap fast" trains, the only reduction was one of 6 cents on the third-class single ticket.

But the London, Chatham & Dover responded by a new tariff of rates to Sheerness which were the same as the Southeastern's by the ordinary trains, but by the "cheap fast" trains were lower, as follows:

	Single. Class.			*Return.* Class.		
	1.	2.	3.	1.	2.	3.
Cheap fast	$1.38	$1.02	$0.66	$2.16	$1.52	$1.04

The great bulk of the travel is third-class; comparatively a trifle is first-class.

The result so far is a reduction of less than one-tenth in the second and third-class fares in the two lower classes by the ordinary trains, and of 2 to 13 per cent. in the fares by the "cheap fast" trains. Yet this is commented on in the *Railway News* as a "threatened war of rates," and hints are given of the great damage the Chatham & Dover may do at some of the Southeastern's stations by way of retaliation. That changes in rates so trifling as these should be thought worth notice in England shows the great stability of rates there. If their traffic managers wish to make a railroad war that will accomplish anything, they will have to go at it with more vigor. Let them send for some Grand Trunk men, experienced in making a first-class rate $5 for the 1,100 miles from Boston to Chicago, and go to the heart of things at once. Or, rather, let them leave skill in the art of railroad war to us. It would be vastly better for them not to learn it. It is an accomplishment hardly more worth acquiring than drinking or gambling.

THE EFFECT OF THE BLOCK SYSTEM may be roughly traced by the smaller proportion of accidents by collisions in Great Britain, as this system has been applied to a larger proportion of the mileage worked.

The London *Railway News* gives the following table showing, for successive years, the number of accidents investigated by the Board of Trade inspectors, the number of pas-

sengers killed and injured, the percentage of the railroad worked on the block system, and the percentage of collisions in the whole number of accidents:

Year.	Road worked on block system. Per cent.	Per cent. of accidents train collisions.	Accidents investigated.	Passengers Killed.	Passengers Injured.
1873	39	55	247	43	1,379
1874	45	53	168	80	1,373
1875	49	49	164	19	1,043
1876	54	45	150	35	1,101
1877	57	46	155	16	563
1878	59	49	118	30	992
1879	62	47	110	4	505
1880	65	42	127	38	996

From 1871 to 1880 the miles of track worked increased 16 per cent., the train mileage 35 per cent., and the number of passengers 60 per cent.

This not only indicates that collisions have been greatly reduced by the block system, but also that in Great Britain there has been comparatively slow progress in the arts and appliances by which other accidents are prevented. Manifestly, if collisions might be reduced one half by adopting the block system and derailments one half by power brakes or other appliances, then if both were adopted the *proportion* of collisions would be as large as before, though the number would be but half as great.

There has been, however, a marked decrease in the number of accidents investigated, which includes those causing death or injury, and others which the Board of Trade inspectors think best to inquire into.

The greater progress in preventing collisions than in preventing other serious accidents will be seen by comparing the numbers of both in successive years:

Year.	Collisions.	Other accidents.	Year.	Collisions.	Other accidents.
1873	146	111	1877	71	84
1874	89	79	1878	58	60
1875	81	83	1879	52	58
1876	68	82	1880	53	74

Thus comparatively slow progress seems to have been made in reducing the number of serious accidents other than collisions; there was on the average 69 of them yearly in the last four years, against 89 in the first four, while the average yearly number of collisions fell from 97 in the first period to 59 in the second.

It must be borne in mind that the accidents enumerated include only the most serious ones, and that in England, as here, a collision is usually a serious accident, while most, probably, of the derailments are not. Doubtless a much greater proportion of collisions than of other train accidents is investigated.

CHICAGO RAIL SHIPMENTS EASTWARD for the week ending Oct. 14 for three years have been:

	1880.	1881.	1882.
Tons	38,476	56,095	34,790

This year the shipments were 39 per cent. less than last year, but only 9½ per cent. less than in 1880. The receipts from the shipments must have been about at the rate of $1,000 this year to every $819 last year, and every $1,327 in 1880. The shipments of the week this year were somewhat larger than in any other since the third week of September. For seven successive weeks the shipments have been in tons:

Week to						
Aug. 31.	Sept. 7.	Sept. 14.	Sept. 21.	Sept. 30.	Oct. 7.	Oct. 14.
*37,902	38,106	36,878	35,611	*33,076	32,810	34,790

Before the last week of August the shipments had not amounted to as much as 30,000 tons in any week since April.

Of the shipments of the week ending Oct. 14, the Chicago & Grand Trunk carried 9.5 per cent., the Michigan Central 24.5, the Lake Shore 20.1, the Fort Wayne 26.7, the Panhandle 11.4, and the Baltimore & Ohio 7.8 per cent. Thus the two Vanderbilt roads had 44.6 per cent. of the whole and the two Pennsylvania roads 38.1. The share of the former is the largest and that of the latter the smallest for a long time.

The eastward shipments billed at Chicago during the week ending Oct. 21 (not including shipments from points west billed through Chicago, which are included above) were 23,060 tons, against 26,188 tons in the previous week and 46,094 in the corresponding week of last year. Compared with last year there was a decrease of 49 per cent. in provision shipments, 58¾ per cent. in grain and 21¾ per cent. in flour. There is a great quantity of wheat and flour to come forward, but farmers are not now anxious to sell and are able to hold, and European consumers are well supplied at present from Europe and California. There is very little corn to come forward, and the stock of hogs is light.

CANAL RATES, which had advanced two cents a bushel in the first half of last week, lost the whole of this advance by Monday last, and are quoted now at 68 cents a bushel for corn and 6½ for wheat from Buffalo to New York—half a cent less than two weeks ago. This is probably a remunerative rate to the boatmen, however. Lake rates have advanced ¼ cent, to 2¾ cents a bushel for corn and 3 cents for wheat from Chicago or Milwaukee to Buffalo, with shipments still light.

There will be only about ten more days during which shipments made by canal are likely to get through to New York, and in two weeks probably very few more shipments will be made. Shipments by lake may be made throughout November, but unless the season is unusually mild the clearances will be very few in the last week of November.

In ocean rates there have been slight fluctuations, but no considerable changes. Recent quotations are 4d. per bushel for grain by steam from New York to Liverpool, and flour at 2s. 6d. per barrel. It is noticeable that while the railroads in this country carry flour at a rate which is nominally the same as that for grain, but actually lower (because the barrel of flour is reckoned as 200 lbs., while it actually weighs about 210 lbs.), the ocean steamers do not find it necessary to do this. The flour rate above is equal to 30 cents per 100 lbs.; the grain rate to only 13⅛ cents. Usually, it is true, the vessel can put grain in room where it could not well put flour; but the notable thing is that while the cost of carrying is much greater for flour than for the grain of which it is made, the proportion of wheat that is ground for export increases rapidly, showing that other elements than the cost of transportation exercise a controlling effect.

* At that rate for the last ten days of August and nine days of September.

BRITISH RAIL EXPORTS TO THE UNITED STATES show a great decrease in September, when they were but little more than half as great as in August, and not two-fifths of the July exports to this country, and were the smallest since October, 1879, which was the third month of the revival of our rail import trade, previous to which for several years our takings had been but trifling. Our imports last month were about enough for 77 miles of track, and how insignificant this is may be judged by the fact that in the last month we have laid track on not less than 1,000 miles of new road, while the consumption for maintenance must have been equivalent to some 600 miles more. We have nearly ceased taking foreign iron rails, and, we believe, the manufacture of iron rails in this country is declining rapidly. In the last four months the aggregate British exports of iron rails to this country have been but 349 tons; while in the first five months of the year they averaged 4,113 tons per month, in 1881, 8,028 tons, and in 1880, 8,989 tons. Heretofore for several years we have been the chief importer of British iron rails. Of the total exports of these rails in the nine months ending with September we took 71¾ per cent. in 1880 and 82½ per cent. in 1881; and even this year we have taken more than 50 per cent.; but these total exports of iron have become very small—60 per cent. less this year than last and 63 per cent. less than in 1880.

NEW PUBLICATIONS.

James Spear's *Illustrated Catalogue of Improved Anti-Clinker Railway Car Heaters and Ventilators*, published at Philadelphia, belongs to the class of illustrated trade catalogues which, from the care taken in preparing them and their cost, bring them within the limits of a notice under the above heading. It is to be regretted that such catalogues are not oftener written in the form of elementary treatises, because then they would supply a literature of trade of the utmost value. Thus, quite a useful essay could be made on the construction of stove grates, and in writing it the advantages of the anti-clinker system which Mr. Spear uses in his stoves could be fully set forth. In the catalogue before us this is not done clearly anywhere; the grate is illustrated, but without fuller explanation than is given, it is not easy for any one to understand its construction from the engravings alone. Any one who has ever used this grate will soon appreciate its advantages over the ordinary and old-fashioned forms in use, but the construction and the operation and the advantages of the system could be made clearer to the reader who has never seen it than it is in the publication before us.

All the different patterns of stoves manufactured by Mr. Spear are illustrated by elaborate engravings, and the parts are designated with great clearness to facilitate the ordering of duplicates.

In the Spear system the heating is done by convection; that is, a supply of pure cold air is taken from the outside of the car and passed over or around the stove and thus warmed and then distributed by flues through the car. The stoves thus ventilate the car at the same time that they warm it.

A variety of patterns of car stoves are illustrated, for burning anthracite and bituminous coal and wood. A great many of them are in use, and they are well known to travelers and railroad men. The anti-clinker grate saves a great deal of trouble in keeping the fire clean, as we know from experience, and most people will agree that all the fresh air that can be warm and admitted into a car in cold weather is a sweet boon.

The "Illustrated Catalogue of Lamps, Head-Lights, Burners and Trimmings," published by Post & Company, of Cincinnati, is a small publication, of 128 pages, half-way between a pamphlet and a book. It is 4½ × 7½ inches, and opens on the short side. It gives engravings of 16 single-light centre lamps, six two-light centre lamps, one with four lights, 11 side-lamps, three "postal service" lamps, seven student lamps, four hanging lamps, three or four office lamps, one station-box lamp, 27 different kinds of burners, a tail lamp, train lamp, four patterns of lanterns, a variety of chimneys, globes and shades, semaphon lenses, switch and cab lamps, engineer's torch, 11 illustrations of head lights, with two more of thin burners.

This catalogue has evidently cost a great deal of money, and has been prepared with great care and illustrates very fully the various articles manufactured by the firm which issued it, but it is subject to the same criticism that was made of Spear's catalogue, that is, it does not give *the* kind, or *a* kind, of information which a person unfamiliar with the articles described in it would look for, or would be interested in finding in such a publication. Nowhere that we know of is there a treatise or essay on lamps or lamp burners which is at all even with the state of the art. A short and clearly written description of the principles and construction of lamps and lamp burners, with which these manufacturers are doubtless thoroughly familiar, would be a valuable addition to technical literature, and would cause their catalogue to be preserved wherever it was circulated. The same thing is true of head-lights. There is nothing published in the English language, excepting patents, in which the construction of head-lights is described or their principles explained. All the information required to make a treatise of this kind Messrs. Post & Co., no doubt, have in their establishment. It is a pity they don't give it to the public in the way indicated.

As catalogues go, the one before us is a very excellent one, and from the well-known reputation of this firm, doubtless the articles they manufacture are as good as their catalogue is or should be.

John Wiley & Sons announce a second edition, "revised, enlarged and brought up to date," of that admirable and encyclopedic work, *Tunneling, Explosive Compounds and Rock Drills*, by Henry S. Drinker, Engineer of Mines, with 1,200 pages of text and more than a thousand illustrations. It is a good sign that so sterling and thorough a work, though so large and expensive, has been so well patronized.

The same publishers announce *Electrical Illumination*, a compilation of articles by various writers that have appeared in *Engineering*, edited by James Dredge, one of the editors of that excellent journal. This volume is devoted chiefly to discussions of electrical measurements, generators, conductors, carbons and electrical lamps, and has in an appendix, abridgments of all the British patent specifications referring to electric lighting, from 1837 to 1872, and a list of all English and American patents referring to the light since 1837. It is a quarto volume of 906 pages, with nearly 800 illustrations, and is to be followed by a second volume on "Installations, Motive Power, Cost of Production and Maintenance, Electrical Photometry, Secondary Batteries, Accessories to Electric Lighting," etc., and a completion of the abridgments of British patent specifications down to 1881.

New Passenger and Freight Stations of the Pittsburgh, Cincinnati & St. Louis Railway in Cincinnati.

The new passenger station, a plan and elevation of which is given in the present number, is located on the southeast corner of Pearl and Butler streets, extending with its main entrance front along Butler street 116 ft. 4 in., and 89 ft. 6 in. along Pearl street.

Its foundations consist of blue limestone masonry, reaching to the base of the lower story windows, where they are capped with a beveled water-table of white Dayton limestone. All outer walls are of pressed brick of Zanesville, O., manufacture, trimmed with Cincinnati freestone. The roof is partly of slate and partly of tin.

The ground floor contains a main waiting-room in the central part of the building, open to the roof; on the left of the main entrance is a passage leading to the ladies' waiting-room, and connected with that room is a toilet-room and closets. The general ticket office, the Pullman office, a package room and water closets are all located upon the left of the general waiting-room, as is also an exterior hall and stairway leading to the offices in the upper story.

In the rear of the general waiting-room and directly opposite the main entrance are the doors leading to the train shed. On the right of the general waiting-room are the dining-room and lunch-room, with kitchen between the two; also telegraph office, depot master's office and conductors' room.

In the upper story of the building are the offices of the Superintendent of the Little Miami Division, the train dispatcher's office, conductors' rooms and closets. All these rooms are located along the outer walls of the building, leaving the entire interior space open for light and ventilation for the main waiting-room below. A gallery connects the rooms of the upper story, and affords a view over the general waiting-room and lower story of the building.

The interior walls are frescoed in oil, and the wood-work is finished in black walnut, all of modern designs and workmanship. The floors are tiled. The gas fixtures are of polished bronze of tasteful designs.

The rear of the building is sheltered by a porch inclosed by an iron railing, with iron gates for access to the train-shed.

The train-shed is 360 ft. long and 85 ft. wide between columns, affording entrance for four tracks and sheltering two additional tracks under the projections of the roof. It is composed of wrought-iron columns anchored to stone foundations, roofed by wooden arched ribs and covered with tin. A substantial wall, surmounted by an iron fence, incloses the yard along Pearl street. The widening of Butler street and the space south of the passenger station afford ample room for approach of carriages and vehicles for the landing of passengers and baggage.

Near the southeast corner of the passenger station is a brick building, 85 ft. long and 24 ft. wide, for baggage, mail and express rooms. The passenger yard is separated from the freight yard by a division wall extending from the ice-house eastwardly to a point east of Kilgour street.

The elevation of Pearl street at the corner of Butler street is about 11 ft. above the level of Front street, which difference made it necessary to establish the two yards on different planes in order to afford access to each from the adjacent streets. The tracks of the passenger yard are therefore ascending from the point of divergence east of the city water-works towards the passenger station, and the freight tracks are descending in the same direction, the division wall rising in height with the increasing difference in the elevation of the tracks.

Immediately south of the division wall is a spare track for delivery of bulk freight. Next to this is the track leading to the Newport & Cincinnati Bridge, upon a rising grade of

110 ft. per mile. Between this bridge track and Front street are the freight tracks and freight stations. The new freight-house is 505 ft. long and 94 ft. wide: it is composed of iron columns supporting a combination roof covered with tin. Adjoining the new freight-house on the west are the offices of the local agent, cashier, and their clerks, in a two-story brick building facing on Front street.

An old freight-house, east of Kilgour street, has been retained for a local delivery station.

The former passenger station on the south side of Front street has been converted into a freight station for use of the Louisville & Nashville Railroad.

The passenger station was built under contract by James Griffith & Sons, of Cincinnati; the passenger shed was built by Cofrode & Saylor, of Philadelphia, and the new freight-house by C. J. Shultz, of Pittsburgh, Pa.

The greater portion of the ground occupied by these improvements was heretofore covered by numerous business establishments of various kinds, the removal of which caused much delay, so that the new improvements were not completed ready for use until late in December, 1881, although work was commenced in July, 1880.

The total cost of the improvements foots up as follows:

Passenger station	$79,422.39
Passenger shed	28,995.48
Baggage building	5,660.71
Freight station	53,090.32
Converting old passenger station into freight station	2,646.78
Yard tracks	44,319.76
Retaining walls	10,134.93
Grading	7,688.77
Street paving	17,369.95
Total cost	$249,229.09

The plans for the passenger station were designed by Mr. S. J. Hall, Architect, and the entire improvement was made under the direction of Mr. M. J. Becker, Chief Engineer of the company.

General Railroad News.

MEETINGS AND ANNOUNCEMENTS.

Meetings.

Meetings will be held as follows:

New York, Lake Erie & Western, annual meeting, at the office in New York, Nov. 28. The register for voting bondholders is open from Sept. 29 to Oct. 28.

Cincinnati, Indianapolis, St. Louis & Chicago, annual meeting, at the office in Indianapolis, Ind., Oct. 31, at noon.

Railroad Conventions.

The *American Society of Mechanical Engineers* will hold its stated annual meeting in New York, Nov. 2. Arrangements for the meeting will be announced hereafter.

Dividends.

Dividends have been declared as follows:

Pullman's Palace Car Co., 2 per cent., quarterly, payable Nov. 13. Transfer books close Nov. 1.

St. Paul, Minneapolis & Manitoba, 2 per cent., quarterly, payable Nov. 1. Transfer books closed Oct 21.

American Society of Mechanical Engineers.

The following are among the papers promised for the November meeting:

"The Rail Cambering Arrangement of the Lackawanna Coal & Iron Co.," by Wm. K. Seaman.

"Refractory Materials," by Prof. Thomas Egleston.

"The Strength and Stiffness of Large Wooden Beams," by Gaetano Lanza.

"Technical Schools for Artisans," by Alfred Colm.

Papers will also be presented by H. S. Hayward and W. J. Silver.

Association of American Railroad Superintendents.

As noted last week the first day's session, after the election of officers and the disposition of the usual routine business, was devoted to the discussion of the report of the Committee on Train Rules and Signals, and the following uniform code was recommended for adoption on all the roads in the country:

Enginemen's Signals by Whistle.—One short blast of the whistle is a signal to apply the brakes—stop. Two long blasts of the whistle is a signal to throw off the brakes. Two short blasts of the whistle when running is an answer to signal of conductor to stop at next station. Three blasts of the whistle when standing is a signal that the engine or train will back. Three short blasts of the whistle while running is a signal to be given by passing trains when carrying signals for a following train, to call attention to the signals, and four short blasts is the answer to it. Four long blasts of the whistle is a signal to call in the flagman or signalman. Six short blasts of the whistle is the engineman's call for signals. Two long, followed by two short blasts of the whistle when running is a signal for approaching a road crossing at grade. A succession of short blasts of the whistle is an alarm for cattle, and may be used to call the attention of trainmen to danger. One long blast is a signal when approaching stations, railroad crossings and junctions. A blast of the whistle of five seconds duration will be considered as a long blast.

Conductors' Signals by Bell-cord.—One tap of gong when the engine is standing is a notice to start. Two taps of the gong when the engine is standing is a notice to call in the flagman. Two taps of the gong when the engine is running is a notice to stop at once. Three taps of the gong when the engine is standing is a notice to back the train. Three taps of the gong when the engine is running is a notice to stop at the next station. One tap of the gong when running will be regarded as a warning that the train has parted, and the engineman will follow the rule prescribed for that emergency.

A Lamp, Hat, or Hand—Swung across the track is a signal to stop. Raised and lowered vertically is a signal to move ahead. Swung in circle is a signal to move back.

On the second day, it was resolved that the future meetings should be held with closed doors. The question of free passes was discussed, and a committee of three was appointed to report at the next meeting. It was resolved that the Association should recommend that its members should not hire discharged employés of other railroads, unless they presented a letter from the superintendent of the road from which they were discharged, stating the cause of their dismissal.

The next meeting of the Association will be at the Grand Pacific Hotel in Chicago in April.

ELECTIONS AND APPOINTMENTS.

Association of American Railroad Superintendents.—At the meeting in New York last week the following officers were chosen: President, P. S. O'Rourke, Grand Rapids & Indiana; First Vice-President, E. T. D. Myers, Richmond, Fredericksburg & Potomac; Second Vice-President, R. Schermerhorn; Third Vice-President, A. A. Folsom, Boston & Providence; Secretary, Waterman Stone, Providence, Warren & Bristol; Treasurer, R. M. Sully, Petersburg; Assistant Secretary, D. W. Sanborn.

Baltimore & Potomac.—At a recent meeting of the board Mr. Charles E. Pugh was chosen General Manager, and George C. Wilkins General Superintendent.

Buffalo, New York & Philadelphia.—The new board has elected officers as follows: President, Bronson C. Rumsey, Buffalo, N. Y.; First Vice-President, J. W. Jones, Philadelphia; Second Vice-President, Archer N. Martin, New York; Secretary and Treasurer, Francis S. Buell, Buffalo; Assistant Secretary, Charles E. Kimball, Philadelphia.

Buffalo, Pittsburgh & Western.—Mr. E. T. Johnson is appointed General Freight Agent, with office at Buffalo, N. Y., vice E. H. Witter, appointed Assistant Superintendent.

Chicago & Northwestern.—The following circular has been issued by Mr. H. C. Wicker, Freight Traffic Manager:

"On and after Nov. 1, 1882, the organization of the General Freight Department of this company will be as follows: William S. Mellen, General Freight Agent, Chicago. Charles H. Knapp, Assistant General Freight Agent, in charge of Wisconsin Division, including Kenosha & Rockford line, Afton Branch; Sheboygan & Princeton line; Chicago & Milwaukee line; Milwaukee & Fond du Lac line; Galena, Platteville, Woodman and Lancaster branches; Peninsula Division, including all branches, and Fox River Branch of the Galena Division north of Crystal Lake. Hiram R. McCullough, Assistant General Freight Agent in charge of the Galena Division and branches, including the Fox River south of the Crystal Lake; Iowa Division and branches; Iowa Midland line; Des Moines & Minneapolis line; Iowa Southwestern line and branches; Maple River line and branches and Northern Iowa Division and branches. All communications pertaining to the local freight traffic of the above divisions, also to the interchange of traffic between divisions, will be addressed to the respective assistant general freight agents at Chicago."

Mr. W. S. Mellen, the new General Freight Agent, was formerly Assistant General Freight Agent of the road, which position he resigned about a year ago to accept the position of Assistant General Superintendent of the Atchison, Topeka & Santa Fe. A short time ago Mr. Mellen was offered the position of General Freight Agent of the Chicago, Milwaukee & St. Paul, but he declined the place. Messrs. Charles H. Knapp and H. R. McCullough, who have been appointed assistant general freight agents of the Northwestern, have held the positions of division freight agents of this company for some time past.

Cincinnati, Hamilton & Dayton.—Mr. W. F. Stark has been appointed Assistant Superintendent of the Dayton & Michigan Division, with office in Toledo, O. He was formerly on the Little Miami road.

Colorado Pool.—The companies composing the new Colorado pool (the Union Pacific, the Atchison, Topeka & Santa Fe and the Chicago, Burlington & Quincy) have appointed Mr. T. J. Potter Chairman of the Executive Committee and Mr. George H. Daniels Commissioner of the pool.

Columbus, Springfield & Cincinnati.—This company has elected the following officers: J. S. Farlow, President; J. D. Farnsworth, Vice-President; J. L. Moore, Secretary and Treasurer; A. P. Simpson, Assistant Treasurer and Transfer Agent, Boston. The road is leased to the Indiana, Bloomington & Western Company.

Fitchburg.—Mr. G. A. Coolidge has resumed his duties as Superintendent of Motive Power, and Mr. W. A. Foster has returned to his former position as his assistant at Fitchburg.

Indiana, Bloomington & Western.—Mr. J. H. Wilson has been appointed General Superintendent, a new office on this road. Mr. Wilson has been on the road 10 years, serving as Train Dispatcher, Superintendent of Telegraph and Division Superintendent.

Louisville, Evansville & St. Louis.—Mr. James Phillips has been appointed Master of Transportation, with office in New Albany, Ind. He was recently on the Jeffersonville, Madison & Indianapolis road.

Massachusetts Central.—At the annual meeting in Boston, Oct. 25, the following directors were chosen: Luke Lyman, Northampton, Mass.; Henry F. Hills, Amherst, Mass.; J. Edwin Smith, Worcester, Mass.; Samuel N. Aldrich, Marlboro, Mass.; Elisha S. Converse, Malden, Mass.; Lyman Hollingsworth, Cohasset, Mass.; Ginery Twichell, Brookline, Mass.; Charles R. McLean, Wm. T. Parker, Thomas H. Perkins, Moses W. Richardson, George Whitney, Henry Woods, Boston.

Missouri Pacific.—The following circular, relating to the Freight Department of this company and its leased and controlled lines, is dated Oct. 17:

"Mr. S. Frink has resigned his position in the Freight Department of these companies.

"Mr. George Olds is appointed General Freight Agent of these companies, with office at St. Louis.

"Mr. Allen McCoy, General Freight Agent of the Southern Division of these companies, with office at Galveston, Texas, is assigned to the territory in Texas south of and including Longview, Mineola, Hearne, Milano Junction and Taylor, and in Mexico reached *via* Laredo, and will have charge of and make rates on all freight traffic from points within that territory.

"Mr. W. H. Newman, General Freight Agent of the Central Division of these companies, with office at Dallas, Tex., is assigned to the lines in Louisiana and the territory in Texas north of Longview, Mineola, Hearne, Milano Junction and Taylor, and east of and including Toyah, and will have charge of and make rates on all freight traffic from points within that territory."

Mr. Olds has issued the following circular:

"Mr. G. W. Cale, Assistant General Freight Agent, has immediate charge of the Missouri Pacific Railway system, extending from Hannibal and St. Louis to Denison, Tex., on the south and west and northwest to and including Omaha.

"Mr. J. J. Rogers, Assistant General Freight Agent, has immediate charge of the territory embraced in the St. Louis, Iron Mountain & Southern Division of this company."

New York Central & Hudson River.—Mr. Joseph Franklin has been appointed Assistant Superintendent of the Grand Central Depot in New York. He formerly held this position, but for some time past has been Superintendent of the Boston & New York Air Line road.

Oregon Railway & Navigation Co.—Mr. Oscar Vanderbilt has been appointed General Travelling Agent, with headquarters in Chicago.

Pittsburgh, Cincinnati & St. Louis.—The office of Chief Engineer M. J. Becker will be at Columbus, O., from and after Oct. 23.

Richmond & Danville.—Messrs. J. A. Rutherford and M. Bayard Brown, of New York, and Robert Harris (Vice-President of the Erie), have been chosen directors to fill vacancies made by the resignation of Messrs. Joseph Bryan, Wm. H. Palmer and T. M. R. Talcott.

Rock Island & Peoria.—At a meeting of the board of directors of this company at Rock Island, Oct. 6, Joseph Gaskell tendered his resignation as Treasurer of the company, to accept a similar position on the Minneapolis & St. Louis Railway. H. B. Sudlow was then elected Treasurer of this company, to fill said vacancy. All communications pertaining to this department should be addressed to him at Rock Island, Ill., and remittances made in the usual manner.

Robert Stockhouse having resigned as Agent at Peoria, is appointed Cashier and Paymaster of this company, with office at Rock Island.

Springville & Sardinia.—At the annual meeting last week the old board was re-elected, as follows: Bertrand Chaffee, C. J. Shuttleworth, A. L. Vaughn, Springville, N. Y.; James Hopkins, N. J. Hosmer, Charles Long, Sardinia, N. Y.; Franklin D. Locke, Buffalo, N. Y. The board re-elected Bertrand Chaffee President.

Toledo, Cincinnati & St. Louis.—The following circular is dated Oct. 14:

"Mr. J. G. Clifford has this day been appointed Master Mechanic, with headquarters at Delphos, O., vice Mr. A. E. Stewart, resigned. Mr. Clifford's jurisdiction will extend over the Dayton & Southeastern Division, including Dayton shops.

"Mr. R. B. Jones, Superintendent, having tendered his resignation, Mr. D. T. Bacon has been appointed Superintendent of the Dayton & Southeastern Division.

"Mr. A. M. Metheany, Superintendent, having been granted leave of absence, on account of ill health, Mr. W. N. Moffatt has been appointed Acting Superintendent, taking effect this date."

Union Pacific.—The President has appointed Mr. Edward P. Ferry, of Utah, a government director in place Robert H. Baker, deceased.

Vermont & Canada.—At the annual meeting in Bellows Falls, Vt., Oct. 19., the following directors were chosen: Charles E. Billings, Francis A. Brooks, John D. Bryant, Albert Clarke, Thomas F. Clary, Alfred S. Hall, Wm. H. Webb.

Western Maryland.—At the annual meeting in Baltimore, Oct. 17, the following directors were chosen by the stockholders: Joshua Biggs, Frederick County; George W. Harris, C. W. Humrichhouse, Washington County; John K. Longwell, Carroll County; Edward Worthington, Baltimore County.

The Baltimore city directors (chosen by the City Council) are as follows: Christian Devries, Daniel J. Foley, Wm. H. Graham, E. G. Hipsley, G. H. Hunt, J. I. Middleton, Alexander Rieman, Samuel H. Taggart.

Worcester & Shrewsbury.—At the annual meeting in Worcester, Mass., Oct. 23, the following were chosen: President, Charles H. Perry; directors, George B. Buckingham, Edward Buxton, James E. Drennan, George E. Hapgood; Clerk and Treasurer, George E. Hapgood.

PERSONAL.

—Mr. H. W. Perrin has resigned his position as Master of Trains and Chief Train Dispatcher of the East Tennessee, Virginia & Georgia road.

—Gen. W. S. Holt, of Macon, Ga., President of the Southwestern Railroad Company of Georgia, died Oct. 22, in Portsmouth, N. H., where he was on a visit.

—Mr. Edward G. Babcock, for 35 years General Wood Agent of the Vermont Central Road, died in St. Albans, Vt., Oct. 16, aged 70 years. He had been connected with the road from the time it was first built.

—Mr. Seth Frink having resigned his position as General Freight Agent of the Missouri Pacific and leased lines, was last week presented with an album containing photographs of a number of his associates on that road, with a very complimentary address.

—The Topeka *Capital* says: "Mr. James Charlton, General Passenger and Ticket Agent of the Chicago & Alton, has bought a farm on one of the irrigating ditches near Garden City, in Southwest Kansas, and proposes, it is said, to devote the entire tract to the raising of watermelons. He will give one melon to every person who purchases a coupon ticket from any station on his line. This suggests the 'Watermelon Line' as a proper sobriquet for Mr. Charlton's road."

—Major Thomas O'Connor was shot and killed in Knoxville, Tenn., Oct. 19, in an extraordinary personal conflict, by Joseph A. Mabry, having himself succeeded before his death in fatally wounding Mabry and his son. Major O'Connor was a director of the Nashville, Chattanooga & St. Louis, and of the Tennessee Coal, Iron & Railroad Company; he was formerly a member of the firm of R. G. Huston & Co., who completed the Cincinnati Southern road, and had been engaged in other railroad enterprises. He was considered the richest man in Tennessee.

—The Richmond *State* of Oct. 24 says: "We stated yesterday that Col. T. M. R. Talcott, who held the position of Second Vice-President of the Richmond & Danville, had resigned his place in the directory of that company. Some of our readers it seems understood from this that he had resigned his position as General Manager. The two positions were entirely separate, and while he resigned the former, it in no wise followed that he had or would resign the latter. Col. Talcott is recognized as one of the foremost railroad managers in the United States, and at the desire of the President and board he retains his office of General Manager. While he has been connected with the operating department of the Richmond & Danville for many years, it was only recently that he was made a member of the board of directors, and he resigned his place in the directory entirely from choice."

TRAFFIC AND EARNINGS.

Substitute for Thousand-Mile Tickets.

Mr. George H. Daniels, Secretary of the Western Association of General Passenger and Ticket Agents, has submitted to the various roads in the Western Association a sample of a "commercial ticket record" for their inspection, and asks their opinion as to the feasibility of its adoption in the place of the present "thousand-mile ticket." This "record" was

suggested by John Dyer, Ticket Auditor of the Chicago, Burlington & Quincy Railroad.

The following advantages are claimed for the "commercial record:"

"First—It will prevent the abuse by unauthorized persons of the privilege of reduced rates which is extended to traveling men representing important commercial and manufacturing interests, from the fact that the legal holder is obliged to make a portion of the 'record,' and attach his signature for each ticket he purchases. An agent and conductor are necessary to complete each 'record,' which they will refuse to do if they are not perfectly satisfied that the party presenting the book is the legal holder thereof; and if either the agent or conductor decline to make their portion of the 'record' no rebate will be paid. Thus it will be seen that ticket-brokers and others who deal largely in 'thousand-mile tickets' would not be able to handle this book, as the rebate can only be paid to the original holder, or the house for whom he travels, and his own signature must be attached to each certificate.

"Second—The company will have the same evidence upon which to pay the proposed rebate that is required before paying a freight rebate, and, having in its possession all the papers upon which the rebate is predicated—including the cash paid for the local tickets—can satisfy itself absolutely as to the history of each ticket said to have been purchased, if it seems necessary to do so, before a voucher is made.

"Third—The legal holder of one of these 'records' and the house employing him will be protected in case the book is lost or stolen, or in any other way gets into the hands of any other than the one who is authorized to use it (as is frequently the case with thousand-mile tickets), as in each case the full local fare is to be paid, and no rebate can be secured until at least 1,000 miles have been traveled and the book returned to the company with the certificates complete, in accordance with the instructions and contract.

"Fourth—It will enable the Auditor to accurately locate the earnings from the mileage ticket business upon the different divisions of his road, which it is almost impossible to do under the present system.

"Fifth—In case it is desirable to pool the earnings derived from the mileage ticket business, by the use of this or some similar 'record,' it can be done, whereas it has been found very difficult to put this business into a pool heretofore.

"Sixth—It is estimated that the 'record' will cost about one-half as much as the present thousand-mile ticket."

Railroad Earnings.

Earnings for various periods are reported as follows:

	1882.	1881.	Inc. or Dec.	P. c.
Nine months ending Sept. 30:				
Ala. Gt. Southern	$575,174	$543,343	I. $31,831	5.9
Buff., Pitts. & West	649,065	491,176	I. 157,889	32.3
Net earnings	339,817	165,136	I. 171,681	106.0
Char., Col. & Augusta	601,624	626,920	D. 25,296	4.0
Des M. & Ft. Dodge	255,161	294,921	D. 39,760	13.5
Grand Trunk	12,032,687	11,881,840	I. 150,847	1.3
Houston, E. & W. Tex.	191,289	106,538	I. 84,751	79.2
Marq., Hough. & Ont.	1,012,615	716,732	I. 295,883	41.3
Nash., Chatta. & St. L.	1,385,049	1,577,951	D. 192,911	12.2
Net earnings	609,456	629,803	D. 20,347	3.2
Northern Central	4,421,277	4,030,253	I. 391,024	9.7
Net earnings	1,740,824	1,248,466	I. 492,358	39.4
Oregon Ry. & Nav	2,582,347			
Net earnings	986,954			
Month of August:				
Marietta & Cincinnati	$203,078	$153,818	I. $49,260	32.0
Month of September:				
Ala. Gt. Southern	$77,793	$70,326	I. $7,467	10.6
Buff., Pitts. & West	91,763	65,362	I. 26,401	40.6
Des M. & Ft. Dodge	31,353	47,519	D. 16,166	34.0
Evansv. & T. H.	75,345	70,080	I. 5,265	7.5
Houston, E. & W. Tex.	22,141	15,078	I. 7,063	47.1
Marietta & Cincinnati	201,929	177,566	I. 24,365	13.7
Mar., Hough. & Ont.	151,502	134,743	I. 16,759	12.4
Nash., Chatta. & St. L.	168,999	179,978	D. 10,979	6.1
Northern Central	592,455	429,565	I. 162,870	37.9
Net earnings	269,587	50,406	I. 219,181	434.9
Oregon & Cal	125,730			
Oregon Ry. & Nav	550,000	461,812	I. 85,188	18.3
Net earnings	316,600	283,320	I. 33,280	11.8
Second week in October:				
Cin. & Eastern Ill.	$39,701	$34,971	I. $4,730	13.5
Chi. & Grand Trunk	49,877	39,046	I. 10,831	27.8
Chi. & N. W.	540,218	538,373	I. 1,845	0.3
Mo. Pacific lines	788,004	606,039	I. 181,965	30.0
Wab., St. L & P.	360,497	373,556	I. 13,059	3.5
Third week in October:				
Denver & R. G.	$136,498	$150,098	D. $13,600	9.5
Louisv. & Nashv.	273,300	226,800	I. 46,500	20.4
Northern Pacific	185,200	131,861	I. 53,339	40 5

Grand Trunk earnings include those of former Great Western Railway for the whole period.

Grain Movement.

For the week ending Oct. 14 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past seven years:

Year.	Northwestern receipts.	Northwestern shipments.		Atlantic receipts.
1876	5,352,363	1,800,837	40.4	4,059,398
1877	5,101,813	1,152,962	22.9	6,095,691
1878	5,083,770	1,486,915	29.4	5,904,356
1879	7,180,077	1,868,589	25.8	8,942,726
1880	9,274,351	2,132,509	28.7	6,623,721
1881	5,642,568	2,910,061	51.4	3,801,659
1882	5,002,829	1,800,081	43.3	3,363,498

The receipts of the Northwestern markets were smaller this year than in any corresponding week since 1874, and 640,000 bushels (11 per cent.) than last year; they were also 600,000 bushels less than the week before, and the smallest for eight weeks.

The shipments of these markets were also smaller than in any corresponding week since 1874, with the exception of last year, and 241,000 bushels (6 per cent.) more than then. The rail shipments are the smallest since 1878, but only 10 per cent. less than last year, through rates are twice as high Of the shipments 118,824 bushels, or 2.9 per cent. of the whole went down the Mississippi.

The Atlantic receipts were smaller than in any corresponding week since 1874, and 438,000 bushels (11½ per cent.) less than last year. They were also 686,000 bushels less than in the previous week of this year and the smallest for 12 weeks. In spite of the light crops last year, there was but one week from harvest till December when the Atlantic receipts were so small.

Of the Northwestern receipts for the week, Chicago had 35.9 per cent. of the whole, Toledo 17.6, St. Louis 15.2, Milwaukee 10.9, Detroit 8.4, Peoria 6, Duluth 4.6, and Cleveland 1.4 per cent. The feature of the week is the sudden and great increase of the Toledo receipts, which are more than twice as great as the week before. There have been but five weeks this year when Toledo receipts have been larger. The Detroit receipts also are the largest since 1880. At both these places the receipts were nearly all wheat, and their heavy receipts indicate a revival of the winter wheat movement. At St. Louis there was also a large increase over the previous weeks and three-fifths of its receipts were wheat. While there was a decrease in the aggregate of the Northwestern receipts over the previous week amounting to 600,000 bushels, there was a decrease of 728,000 bushels at Chicago, of 48,000 at Milwaukee, of 57,000 at Peoria, and of 482,000 at Duluth, with increases of 454,000 at Toledo, 55,000 at Detroit, and 214,000 at St. Louis.

Last year in the corresponding week the wheat receipts at these places were but half as large, but the corn receipts were five times as large.

Of the Atlantic receipts for the week New York had 67.1 per cent., Baltimore, 10.3, Montreal 8.6, Boston 7.7, New Orleans 4.0, Philadelphia, 2.2, and Portland 0.1 per cent. The Baltimore receipts are 200,000 bushels less than in the previous week and are the smallest since the middle of July, not one-fourth of its average receipts in August, and not one-half its average in September. The Philadelphia receipts continue trifling. The aggregate for the last four weeks is less than in one week of August. The percentage of the total that came to New York has been exceeded but once this year.

The decrease in Atlantic receipts from the previous week was chiefly in corn.

Of the exports from these ports during the week New York had 35.7 per cent., Baltimore 25.2, Montreal 15.5, New Orleans 13.8, Boston 5.1, and Philadelphia 4.7 per cent. Of the total exports, 88 per cent. was wheat. Last year in the corresponding week more than half the exports were corn; this year less than 9 per cent.

For the week ending Oct. 18 exports were 2,212,287 bushels of grain and 114,219 barrels of flour this year, against 2,352,219 bushels and 53,579 barrels last year, and 5,800,518 bushels and 107,693 barrels in 1880.

For the week ending Oct. 21, receipts and shipments at Chicago and Milwaukee were:

	Receipts.		Shipments.	
	1882.	1881.	1882.	1881.
Chicago	1,850,923	2,381,057	1,898,161	1,077,068
Milwaukee	483,401	354,297	119,215	270,818
The two	2,334,324	2,735,384	2,017,376	1,347,886

The receipts at Chicago were then 530,000 bushels less, and those at Milwaukee 129,000 bushels more than last year. The shipments were 821,000 bushels more at Chicago and 152,000 bushels less at Milwaukee.

For the same week ending Oct. 21 receipts and shipments at Buffalo were:

	Receipts.		Shipments.	
	1882.	1881	1882.	1881.
By rail	312,200	535,800	660,500	981,800
By water	2,019,950	1,463,400	842,300	866 950
Total	2,332,150	1,999,200	1,502,800	1,848,750

There is a decrease of 223,600 bushels in the receipts by rail, and an increase of 556,550 bushels in the receipts by lake; rail shipments were 321,300 bushels less, canal shipments 24,650 less than last year.

For the same week receipts at four Eastern ports have been:

Bushels:	New York.	Boston.	Phila.	Baltimore.	Total.
1882	2,568,161	292,495	995,350	395,175	3,351,181
1881	1,903,909	507,898	163,550	359,649	2,934,206
1880	3,709,756	387,795	1,395,100	1,020,168	6,512,819
P. c. of total:					
1882	76.6	8.7	2.9	11.8	100.0
1881	64.9	17.3	5.6	12.2	100.0
1880	57.0	6.0	21.4	15.6	100.0

Philadelphia and Baltimore together had 14.7 per cent. of the whole this year, against 17.8 last year and 37 per cent. in 1880. The very small receipts at Philadelphia are again noticeable. Of the New York receipts 775,881 bushels (30.2 per cent.) arrived by rail this year, against 1,069,777 bushels (56.3 per cent.) last year, and 1,345,774 (36.4 per cent.) in 1880. The proportion arriving at New York is unusually great. Baltimore receipts are light, as they have been in the two previous weeks—not half the average in September.

Receipts of wheat, corn and oats at Indianapolis, Peoria Chicago, Milwaukee Detroit and Cleveland weekly since July have been:

	Receipts.			Shipments.		
Week to	Wheat.	Corn.	Oats.	Wheat.	Corn.	Oats.
Aug. 7	1,784,228	1,004,752	318 235	2,248,733	955,051	442,577
Aug. 14	98 6,261	1,087,498	535. 30	1,352,419	955,102	492,523
Aug. 21	1,188,833	1,370,026	1,372,098	1,297,303	1,185,078	883,174
Aug. 28	1,893,983	1,548,286	1,908,715	1,243,804	1,246,792	1,644,622
Sept. 4	2,424,120	1,649,936	1,991,790	1,882,105	1,361,477	1,573,383
Sept. 11	2,245,324	1,437,744	1,198,715	1,304,357	701,007	1,463,396
Sept. 18	2,128,277	1,270,105	893,459	1,707,894	1,233,769	966,983
Sept. 25	2,129,198	1,550,142	658,750	1,799, 87	620,394	949,944
Oct. 2	2,594,197	1,207,431	782,466	1,502,891	925,461	692,639
Oct. 9	1,758,063	582,385	689,941	1,530,909	990,929	762,673
Oct. 16	1,613,142	585,693	598,742	1,442,967	1,010,135	608,246
Oct. 23	1,551,546	799,054	907,759	1,115,129	812,236	644,775

The wheat receipts have continued to decrease, and with two exceptions were last week the smallest since July. The corn receipts were the largest for three weeks; and the oat receipts the largest for six weeks. The wheat shipments were the smallest since July, and with two exceptions the corn shipments also; the oats shipments are larger than the week before, but with that exception the smallest for ten weeks.

Coal Movement.

Coal tonnages for the week ending Oct. 14 are reported as follows:

	1882.	1881.	Inc. or Dec.	P.c.
Anthracite	707,487	640,781	I. 66,706	10.4
Semi-bituminous	108,966	103,872	I. 5,094	4.9
Bituminous, Penna	64,539	61,064	I. 3,475	5.7
Coke, Penna	49,604	48,515	I. 1,089	2.2

It is understood that all the special contracts for carrying Clearfield and Snow Shoe coals to tidewater over the Pennsylvania Railroad have been suspended, and that uniform schedule rates will be charged hereafter. It is said that some of these contracts involved a large amount.

Coke shippers are making loud complaints of the scarcity of cars, which has limited coke shipments and prevented them from taking advantage of the active demand.

Anthracite coal tonnages for September and the nine months ending Sept. 30, as reported by the Official Accountant, were as follows, the report differing in form from the weekly statements:

	September.		Nine months.	
	1882.	1881.	1882.	1881.
Phila. & Reading	644,542	665,866	4,899,125	4,938,352
Lehigh Valley	492,361	504,739	4,237,307	4,025,783
Central, of N. J.	351,815	360,609	3,068,630	2,938,125
Del., Lack. & West.	400,313	380,013	3 343,633	3,128,327
Del. & Hud. Canal	282,097	292,374	2,240,983	2,300,055
Penn. R. R	227,877	196,698	1,747,105	1,637,285
Penn. Coal Co	128,608	144,627	1,045,970	1,037,621
N. Y., Lake Erie & Western	30,831	43,293	195,494	355,816
Total	2,558,444	2,588,219	20,778,247	20,361,364

Decrease for the month, 29,775 tons, or 1.2 per cent. The Delaware, Lackawanna & Western and the Pennsylvania Railroad Company alone show gains, the other companies decreases under the short time in the early part of the month.

Increase for the nine months, 416,883 tons, or 2.0 per cent. The Reading, the Delaware & Hudson and the Erie show decreases; the other companies have gained.

The stock of coal on hand at tidewater shipping points Sept. 30 was 513,934 tons, against 603,042 tons on Aug. 31; a decrease of 89,108 tons, or 14.2 per cent., during the month.

The coal tonnage of the Pennsylvania Railroad for the week ending Oct. 14 was: Coal, 163,037; coke, 49,604; total, 212,641 tons. The total tonnage this year to Oct. 14 was 8,623,021 tons.

Coal shipments over the Columbia & Puget Sound road and by sea from Seattle, Washington Territory, in September were 12,338 tons, all to San Francisco.

Cumberland coal tonnage for the week ending Oct. 21 was 52,652 tons, making a total this year of 1,008,004 tons.

Petroleum.

Stowell's *Petroleum Reporter* gives the following statement of the business of the Pennsylvania and New York oil wells for September, in barrels of 42 gallons:

	1882.	1881.	Inc. or Dec.	P. c.
Production	2,620,380	2,193,420	I. 426,960	19.5
Shipments	1,992,171	2,131,950	D. 139,779	6.5
Stock, Sept. 30	32,400,303	25,066,657	I. 7,333,646	29.3
Producing wells	19,600	17,562	I. 2,038	11.6

Of the production about 52½ per cent. was from the Bradford District, and 20½ per cent. from the adjoining Allegheny District in New York. The production was exceeded in June, July and August of the present year, but in on other previous month.

The shipments are the smallest since May, and were exceeded in four months of last year.

Of the stock on hand 188,283 barrels are reported at the wells, and 32,212,020 barrels in the pipe lines.

There were 164 new producing wells completed in September, and only 13 "dry holes." There were 117 wells reported drilling on Sept. 30.

Shipments out of the regions were as follows:

	Barrels.	Per ct. of total.
New York	705,224	35.4
Philadelphia	225,313	11.3
Baltimore	73,949	3.7
Cleveland	485,079	24.4
Pittsburgh	105,241	5.3
Buffalo	100,000	5.0
Local points	79,990	4.0
Refined at Creek refineries	217,375	10.9
Total	1,992,171	100.0

Of the oil refined at Creek refineries (reduced to its equivalent in crude) shipments were made as follows: To New York, 113,403; Philadelphia, 1,785; Baltimore, 1,588; Boston, 56,248; local points, 44,351; total, 217,375 barrels.

Of the shipments reported (including refined from the Creek) 721,847 barrels were by rail and 1,270,324 barrels by pipe line. The Seaboard Pipe line took 458,703 barrels for New York, the Tidewater Pipe line 133,681 barrels for New York and 32,490 for Philadelphia. The deliveries at Cleveland, Buffalo and Pittsburgh were almost entirely by pipe line.

New York Canal Traffic.

For the week ending Oct. 14 the Canal Auditor reports:

	1882.	1881.	Increase.	P.c.
Tons shipped	189,357	171,105	18,252	10.6
Miles cleared by boats	247,895	223,304	24,591	11.0
Tolls	$24,925	$19,765	$5,160	26.1

The tons of leading articles shipped were:

	1882.	1881.	Inc. or Dec.	P.c.
Lumber	57,680	59,551	D. 1,802	3.1
Grain	47,527	23,296	I. 24,231	104.0
Iron and iron ore	16,181	22,273	D. 6,092	27.3
Stone, lime and clay	11,651	10,154	I. 1,497	14.7
Coal	39,047	38,403	I. 644	1.7
Salt	1,642	4,175	D. 2,533	60.7
Domestic woolens and cottons	79	68	I. 11	16.2
Sugar, molasses and coffee	220	309	D. 89	28.8

The grain shipments, though twice as large as last year, were by no means large for the season. A large decrease in shipments of iron and iron ore is noticeable, though at this time last year low rail rates tended to destroy canal shipments of such coarse freights.

Division of Immigrant Traffic Between Chicago and St. Paul.

In reporting against making a change in the equal division of this traffic among the three lines, the Trunk Line Committee said:

"In arriving at this conclusion the Committee do not undertake to say what is a fair division of the passenger traffic as between the three routes upon general grounds; nor do they wish to have their conclusions considered in any way as of any bearing upon this question arising between the three competing roads themselves. The Committee is fully aware that entirely different considerations may enter into questions of this kind than those which influence the action of the trunk lines. In regard to dividing controllable traffic between the three routes, whenever the interested parties agree themselves upon any division of emigrant traffic, the Trunk Line Committee will be glad to make the distribution accordingly, provided they can do so with full justice to the emigrants. The Trunk Line Committee also reserves the right to change the basis of distribution above mentioned should it become evident that equal justice is not done to the emigrants *via* the three routes."

A dispatch from Chicago, Oct. 25, says: "The Western Trunk Line Association met here to-day to consider the recent action of the Eastern Trunk Lines in awarding to the Rock Island road one-third of the emigrant sea-board business west. The Secretary was instructed to notify the Eastern lines that the award was not satisfactory nor in accordance with the existing agreement."

Passenger Rates to Kansas City.

The following circular is dated Oct. 19, and signed by the general passenger agents of the Chicago & Alton, the Chicago, Burlington & Quincy, the Chicago, Rock Island & Pacific, the Hannibal & St. Joseph, the Illinois Central, the Kansas City, St. Joseph & Council Bluffs, the Missouri Pacific, the Vandalia Line and the Wabash, St. Louis & Pacific roads:

"On and from Monday next, Oct. 23, the following unlimited rates will be in effect each way:

Between:	
Chicago and St. Louis	$8.00
St. Louis and Kansas City	8.00
Chicago and Kansas City, 1st Class	14.80
Chicago and Kansas City, 2d Class	13.00

"Similar advances take place at same time to Leavenworth, Atchison and St. Joseph, which will appear in our November rate sheets now in course of preparation.

"This advance notice is sent you to give you ample time to put these increased rates in effect on and from Nov. 1; on and from which date we shall require our proper proportions on rates based on the same from all our connections."

New Chicago-Sioux City Line.

The Illinois Central having organized a Chicago-Omaha line, the Chicago, Rock Island & Pacific, apparently in retaliation, has formed a new line between Chicago and Sioux City in connection with the Chicago, St. Paul, Minneapolis & Omaha. The new line will not probably secure very

much business, as the whole traffic is not of very great importance; and it must compete with the Northwestern and the Milwaukee & St. Paul as well as the Illinois Central.

RAILROAD LAW.

Liability of Employer for Negligence of Employe.

In Morgan*stern* against the Indianapolis & St. Louis Co., the Illinois Supreme Court holds as follows:

It may be regarded as the settled law of Illinois, that where persons are in the employment of a railroad company, but engaged in different and separate departments, and wholly disconnected with each other in the discharge of the duties of their employment, the company is liable for the negligent acts of a servant in one department, causing an injury to a servant in another department.

2. The true test by which to determine the liability of the common master for an injury to one of its servants caused by the negligent act of another servant, is wh ther they were at the time consociated together in the discharge of their duties, so that their employment requires co-operation and brings them together in such relations that each can exercise an influence over the other promotive of proper caution. If this is so, the common master will not be liable.

3. Where a car inspector at a certain station, whose duty it was to examine thewheels, air brakes, etc., to see that they were in a proper condition, while in the discharge of that duty in respect to a train which had arrived, and while on the platform, near the edge of the track, was s'ruck by a trunk falling from a truck in the hands of the baggage-master at the same place, which knocked the inspector under the car wheels, when he was run over and killed, the baggage-master being then engaged in his duty, taking trunks from the depot to the baggage car for shipment, it was held: That the company was not liable for the negligent act of the baggage-master from the relations existing between the two servants, their business so closely and intimately connecting each with the other, though not in the same line of employment.

In Foley against the Chicago & Northwestern Co., the Michigan Supreme Court recently held as follows:

In an action for negligently causing the death of plaintiff's intestate, a switch-tender employed by a railroad company, through the explosion of nitro-glycerine being transported by it on its road, it was held that the defendant, in complying with the proper request from another railroad company to run for it a short distance one of its cars to be loaded with an article, safe when properly handled, but dangerous when carelessly handled, is not bound to assume negligence on the part of those handling it would occur, nor bound to ake measures for the protection of its servants on that asumption.

When the order for switching the cars was given decedent was notified that the car must be kept out of the way of the passenger train, which would be due after a time, and if not loaded in due season it must be side-tracked. Such order was an order of caution and not of negligence.

Where there was no evidence tending to fix upon the defendant, its officers, or agents any neglect of duty or any want of due care, judgment for defendant must be affirmed.

THE SCRAP HEAP.

Locomotive Building.

The Lima Machine Works at Lima, O., have a number of orders for light engines for logging roads.

The Taunton Locomotive Works in Taunton, Mass., are busy and have a number of orders to be filled.

The Cooke Locomotive Works in Paterson, N. J., are building 25 twelve-wheel freight engines (of the pattern illustrated last week) for the Central Pacific road.

Car Notes.

The Ontario Car Co. and the London Car Wheel Co., whose works are in London, Ont., have been c nsolidated under the name of the Ontario Car & Foundry Co. Mr. T. Muir will have charge of the works as Managing Director.

The United States Rolling Stock Co. has selected a site for its new shops on Section 12 of the Calumet & Chicago Canal & Dock Co. track, east of Stony Island avenue and south of Ninety-fifth street, South Chicago. The Chicago *Tribune* says: "The contract includes the construction of a canal over a mile in length, extending from the Calumet River at a point between South Chicago and Cummings to Stony Island avenue. It will be large enough and deep enough for the largest lake vessels, and have a large number of slips about 600 ft. in length and 200 ft. wide. The earth taken from the canal and slips can be used to advantage for filling purposes, as the location is at present low and wet. Aside from this defect, the location is admirable as far as water communication and railroad facilities are concerned. Immediate connection may be had at the site chosen with the following roads: New York, Chicago & St. Louis, Chicago & Atlantic, Chicago, Rock Island & Pacific, Lake Shore & Michigan Southern, Pittsburgh, Ft. Wayne & Chicago, Illinois Central, Michigan Central, Louisville, New Albany & Chicago, Chicago & Eastern Illinois, Baltimore & Ohio, and the Western Indiana Belt-Line system. The greater part of the 100 acres, if not all, will be occupied by buildings, switches, yards, etc. Nineteen large buildings, constructed in the most substantial manner, will be used for car-building purposes alone. These shops when completed will give employment to over 1,500 men, and turn out 20 cars per day. The yards of the company will accommodate about 1,000 cars. It is intended to expend over $500,000 in improvements before June 1, 1883."

The Terre Haute Car Co. at Terre Haute, Ind., has taken a contract to build a number of cars for the Texas Continental Transportation Co.

Iron and Manufacturing Notes.

At the recent annual meeting of the Pennsylvania Steel Co., Samuel M. Felton, Edmund Smith, Wm. Matthews, Charlemagne Tower, Francis Thompson, Wm. Spackman and H. H. Houston were chosen directors. During the year ending Aug. 31 the company's works turned out 124,620 tons of steel rails and 12,469 tons of blooms and billets. The two blast furnaces made 44,336 tons of pig iron. A new rolling mill and two new blast furnaces are nearly finished.

The Birmingham Rolling Mill, at Birmingham, Ala., has started up after a stoppage since July 1. The men have agreed to resume work at last year's prices.

Lindsay & McCutcheon are enlarging their rolling mill in Allegheny, Pa.

The *Virginias* reports that of 16 charcoal furnaces in Southwestern Virginia, the Reed Island, Barren Springs, Pierce, Cedar Run, Ravenscliff, Wythe, Irondale, Beverly, Speedwell, Walton, Brown Hill, White Rock, Ivanhoe and Radford furnaces—14 in all—are in blast and doing well. Gray Eagle and Cave Hill furnaces are both preparing to go into blast. They are all small furnaces, averaging about six tons a day each.

The Kansas Rolling Mill at Rosedale, Kan., has given up the manufacture of iron rails, and will run hereafter on merchant bar and fish-plates. A spike mill has been added to the works with a capacity of 5,000 tons of spikes a year.

A large nail mill is to be added to the Briarfield Iron Works at Briarfield, Ala., and a new blast furnace is also to be built.

The Rail Market

Steel Rails.—The market is quieter, with no large transactions reported. Quotations continue at $45 to $46 per ton at mill, although it is said that spring orders could be placed at $44.

Rail Fastenings.—Spikes are quoted a little lower, $2.90 to $3 per 100 lbs. Fish-plates are also a little lower, $2.50 per 100 lbs.; track-bolts, $3.70 to $4.20.

Old Rails.—Sales of old iron rails are reported in Philadelphia at $28.50 per ton for American and $27.50 for foreign tees, and $29.50 for double-heads.

Proposals for an Iron Bridge.

The Connecticut River Railroad Company proposes to build a double-track, through, wrought-iron bridge across the Connecticut River, opposite the city of Holyoke, Mass., to be completed for use early next summer.

The bridge will be of five spans; each 152 ft. from centre to centre of piers, and 27 ft. from centre to centre of trusses, with a walk outside of the truss, for foot passengers, 6 ft. wide.

The trusses to be proportioned to support, in addition to the weight of the structure itself—the rails, ties, guards, etc.—a rolling load of 3,000 lbs. per lineal foot, having at its head a consolidation engine of 96,000 lbs.

This bridge is to take the place of a Howe Truss bridge, through which 45 trains pass each day.

The traffic of the road is not to be disturbed, in putting up the new bridge and in removing the old bridge.

The piers are level on the top, 6½ wide, standing at an angle of 72 degrees with the line of the bridge and 34 ft. above low water mark.

The company does not propose to furnish specifications for the building of this bridge, but desires each bidder to present plans for a first-class bridge.

All the specifications and bids will be submitted to a special expert, and the selection of the bridge to be built will be determined by the character of the bridge proposed, and the price named for the removal of the old and construction of the new bridge.

The bids to be forwarded to reach the office in Springfield, Mass., by Dec. 1. The company to retain the right to reject all proposals. It is desirable also that the proposals should state the time required to place the new bridge and remove the old bridge.

British Rail Exports.

For the month of September and the nine months then ending the Board of Trade reports the exports of iron and steel rails from Great Britain to the United States and to all countries as follows, in tons of 2,240 lbs.:

	September.			Nine months.		
To the United States:	1880.	1881.	1882.	1880.	1881.	1882.
Iron	3,880	5,922	103	78,755	83,498	20,916
Steel	10,052	20,111	6,662	92,866	156,773	139,075
Total	13,932	26,033	6,765	171,621	240,271	159,991
To all countries:						
Iron	7,130	8,496	2,621	109,863	101,236	40,580
Steel	36,150	60,631	47,538	367,836	450,924	552,555
Total	43,280	69,127	50,159	477,699	552,160	593,135

For September, the total exports of rails to this country were thus little more than one-fourth as great as last year, and not half as great as in 1880. For the nine months they were one-third less than last year, and 7 per cent. less than in 1880. Exports of iron to this country have substantially ceased, the total for the last four months having been but 349 tons—enough for four miles of track. But the steel exports were also the smallest since February, 1881, and the aggregate steel and iron rail exports were the smallest since October, 1879.

The British rail exports to other countries than the United States in September were nearly the same this year as last, and nearly one-half greater than in 1880. For the nine months, their exports to other countries were 433,144 tons this year, against 311,889 last year, and 306,078 in 1880. The increase in these has been so great that in spite of the large decrease of exports to the United States, the total British rail exports were considerably larger this year than in the previous years. Out of the 50,159 tons exported in September last no less than 16,057 went to the unspecified "other countries," one of which is Mexico. British North America took more than the United States (or any other country), and Italy nearly as much, but Canada as well as the United States took much less than last year. For the nine months the United States is still far ahead of any other customer in its takings, ordering 27 per cent. of the total British exports, but 20½ per cent. went to the unspecified "other countries," 13 per cent. to British North America, 12.3 to British India, 8.9 to Australia, 8¾ to Italy, 5¾ to Brazil, 1¼ per cent. to Sweden and Norway, 1.1 to Germany, and the rest (about 1 per cent.) to Russia and Spain.

Fast Time.

The best time that has ever been made on the Chicago, Burlington & Quincy was made by engine No. 47 last Sunday. The train consisted of six cars, and contained Vanderbilt, the great railroad king, together with several of the chief officials of the road. From Galesburg to Mendota the time was one hour and 39 minutes, a distance of 80 miles. From Mendota to Aurora the run was made in 54 minutes, a distance of 45 miles. Here engine No. 169, with Cooley at the throttle, was coupled to the train, and in 39 minutes had the train going over the Columbus, Chicago & Indiana Central crossing, a distance of 34½ miles. Mr. Cooley claims that he could have made better time, but the brakes were dragging, and thus made his train much heavier than necessary. Yet the distance of 158 miles, between Galesburg and the C., C. & I. C. crossing, was made in three hours and 12 minutes.—*Aurora (Ill.) Beacon, Oct.* 19.

Varieties of Southwestern Travel

A dispatch from Las Animas, Col., Oct. 18, says: "This morning as express train No. 6, to which was attached a special car containing Assistant General Superintendent W. S. Mellen, of the Atchison, Topeka & Santa Fe Railroad, and a party of friends arrived at Lakin, Kan., a party of 15 drunken cowboys, led by F. E. Mead, a discharged telegraph operator, began shooting through the car windows, breaking 8 in one car, 17 in the sleeper, and 5 in the special car. By lying down on the floor the passengers escaped the bullets. The Sheriff, with a posse of 100 citizens from Dodge City, was sent to Lakin on a special train and succeeded in capturing Mead and two of the cowboys. A posse is now in close pursuit of the others."

The Railroad Language.

We wonder why Ollendorf or Max Muller, or any other philologist has never written a work on the peculiar language which railroad employés speak to the outside public. There can be no objection to these hardworking and honest people using their peculiar native tongue in conversing among themselves, but it is very inconvenient for the remainder of the human race who have neglected their linguistic studies.

Railway language is divided into several dialects, but the purest, the Attic, the Castilian, the Tuscan, as it were, is the Eriese. We have been at some pains to give a few phrases, with the necessary translations, that may be of use to the traveler by the Erie Railroad:

"Saykrasernhojergwingswillcwax'nkwawikwawkwaw!"—

Means: "Ladies and gentlemen, the train by which I am standing stops at Passaic, Paterson, Port Jervis, Lackawaxen, Binghamton, Hornellsville, and all points West!"

"Surngsenfresm!"—

Means: "Ladies and gentlemen, we are now at Turners, where we will stop for ten minutes to allow you an opportunity of procuring refreshments!"

"D'nohaftask'nducktr!"—

Means: "I regret, madam, that I am unable to answer your question, but I have no doubt that the conductor, who will come through the train presently, will be able and willing to afford you any information you may desire!"

"Le'thatthereseatalonewot'sdematterwityerdou'trytoturn desmseatsover!"

Means: "I beg pardon, sir, but I am bound to tell you that it is against the rules of this road for two seats to be turned so as to face each other, in ordinary passenger coaches!"

"Changeleanellsvilleorningiraegohsamptonqwehannasburgervisnerskwawkwawkwaw!"

Means: "Ladies and gentlemen, it is proper to remind you to change here for Oleau, Hornellsville, Corning, Elmira, Waverly, Owego, Binghamton, Susquehanna, Narrowsburg, Port Jervis and Turners!"

Odd as is the Eriese dialect in construction and pronunciation, there is yet another variety of it which is peculiar to the waiter girls at the Erie refreshment stations. It is even more difficult to acquire or comprehend than the original Mother Eriese. We append a couple of sentences:

"Steercough?"

Means: "Do you prefer iced tea or iced coffee?"

"Roseveestwokinballdamnmutnash!"

Means: "Ladies and gentlemen, we offer you to-day roast veal, stewed kidneys, boiled ham, mutton hash!"

Any persons who are desirous of taking lessons in Eriese and other railroad languages can hear of an instructor, at $20 a lesson, by calling at this office out of business hours.—*Puck.*

Some New Information.

Last week we took a spin over the Michigan Central, and during our waking moments were highly edified, amused and instructed by the tone and conversation of two ladies in the seat forninst our own, across the aisle and abaft the binnacle. The variety of their intelligence and a vast fund of general information attracted our attention, and we just sat there and drank it all in like cold truth from a living spring.

"Do you suppose they have air brakes on this train?" inquired the one next the window, with a bronze green plume in her hat.

"Oh, yes; they run 'em now on all trains."

"What are they for?"

"O, they are to ventilate the car and give 'em more fresh air. I heard they intended to put 'em on cattle cars so the poor animals could get plenty of oxygen."

"Indeed! This is a wonderful age. Did you ever ride in a chair car?"

"O, yes, they are just the nicest kind of cars. Some of 'em are real easy, too; have rockers on 'em. But I like a sleeper the best."

"Yes, they are more homelike and comfortable. If any accident happens they unhook the sleeper and leave it at the last station."

"Why, my! How nice!"

"Yes, and the sleeper is much more comfortable to ride in, because it don't go as fast as the rest of the train."

"It don't?"

"O, no. Charles says the Pullman Company won't allow the railroads to haul the sleepers near so fast as the balance of the cars."

"Why, how strange!"

"Yes, very."

"What do you suppose makes the cars sway so, back and forth?"

"O, I heard the railroad company had been experimenting lately with rockers on the cars. It's something to do with concussion and retraction of the expansive compression, or something of that kind."

"What a wonderful age?"

"It is, really. And these accident insurance companies are a great improvement over the old style of traveling. Charles says all first-class roads carry them nowadays, and it makes one so much more secure to know that they are on the same train with one of them. They are worked by electricity, and must cost awful high, don't you think so?"

"Yes, they must that."—*Chicago Times.*

Tramps.

A few nights ago Mr. John Hughes, while making an inspection of the cars that came from the north over the Intercolonial road, heard a noise which excited his curiosity, and he proceeded to learn what caused it. In a car, which had been sealed at Toronto, he found a tramp crouched between a number of sewing machines. It is said the car was six days on the journey, and when the door opened the car was full of smoke. It seems that the imprisoned tramp tore off the paper wrapped around a number of sewing machines, and burned it to warm himself. He was almost asphyxiated, and had to be dragged out of the car. As there was no entry made on the invoice of such freight, it was evident to Mr. Hughes the charges could not be collected and he allowed the curious fellow his liberty.—*Moncton (N. B.) Transcript.*

Exhibits at the Master Car-Builders' Meeting.—The Allen Paper Car Wheel.

In our notice of the articles exhibited at Niagara Falls we omitted to mention the specimens of these wheels which were conspicuously present. Their construction is so well known to railroad men that a description of them is not needed. The opinion of railroad men of them is indicated by the fact of which an officer of the company informs us, that when they first commenced advertising in the *Railroad Gazette* that they manufactured 1,000 wheels per year. Since then their product has increased to 13,000 in 1881, with a fair prospect of reaching 20,000 this year. This indicates not only how good these wheels are, but also the value of an advertisement in the *Railroad Gazette.*

A Prosperous Road.

Injunction No. 109 has just been filed or laid upon the Texas Trunk. It now has one injunction to every cross tie, a suit to every culvert, and a judgment to every bridge, with four hundred law offices to hear from. A fellow shipped a cord of wood over it the other day, the freight on which was 40 cents. Thirteen garnishments were run upon him before he had time to pay it.—*Ft. Worth (Tex.) Gazette.*

The First Locomotive Built in the South.

A *Times* reporter visited the shops of the Alabama Great Southern Railroad yesterday, and found everything running as smoothly as possible. In the paint shop is a new passenger train, which is just being completed. It consists of baggage car, mail car, smoking car, second-class and ladies' car. When completed it will be the first complete passenger train ever built in the South. The company are making every effort to have it finished by Nov. 1, when it will be put on the road and run regularly. The cars present a beautiful and attractive appearance, and reflect great credit upon the builders and painters. It will be, without doubt, the prettiest train of cars ever run out of Chattanooga.

The company has recently commenced the building of a large locomotive; it will be built on the style of the mogul. An item of special importance attached to the construction of the engine is that all the material which will be used, from the smallest bolt to the largest piece of forging, is all manufactured in this city. This company will enjoy the reputation of having built the first complete locomotive ever built south of the Ohio River. Three engines are now in the shops undergoing a thorough overhauling, and will be almost new when finished.—*Chattanooga Times, Oct.* 10.

The *Times* is certainly mistaken as to the first locomotive built in the South. To say nothing of the Louisville & Nashville shops, the South Carolina Railroad shops at Charleston built two freight engines several years ago, and, if we are not mistaken, one or more locomotives have been built in the Georgia Railroad shops. The Central Railroad of Georgia has also built a number of passenger cars.

The Tallman Automatic Brake.

The following is a report of tests of the Tallman automatic brake made Oct. 18, on the Cincinnati, Hamilton & Dayton road in the presence of a number of railroad officers. The tests were all made on a descending grade of 25 ft. to the mile. The train consisted of the locomotive, five empty stock cars, four loaded freight cars, a caboose and two passenger cars. The Tallman brake was on four of the freight cars. The stops made were as follows:

1. Speed, 25 miles an hour. Using the four automatic brakes and the air brakes on the engine, stop was made in 20 seconds time, 610 ft. distance.

2. Speed 30 miles an hour. Using the four automatic brakes and the engine air brakes, stop was made in 60 seconds time, 900 ft. distance.

After this test the two passenger cars were detached and the remaining stops made with the nine freight cars and caboose only.

3. Speed, 25 miles an hour. Using engine air brakes only, stop was made in 95 seconds time, 1,700 ft. distance.

4. Speed, 25 miles an hour. Using engine air brakes and hand brakes on all cars, stop was made in 35 seconds time, 700 ft. distance.

5. Speed, 25 miles per hour. Using seven hand brakes only, the engine air brake not being applied, stop was made in 61 seconds time, 1,350 ft. distance.

6. Speed, 25 miles per hour. Using four hand brakes and the engine air brake, stop was made in 45 seconds time and 900 ft. distance.

The caboose was fitted with a speed recorder, so that the exact speed was obtained.

Standard Time.

The question of standard time for the United States, Canada and Mexico continues to be discussed by those who have made a special study of the subject, including E. R. Knorr, of Washington, who has published a review of the propositions of the American Society of Civil Engineers, prepared by a committee appointed at their annual meeting last March. The following are objections to the propositions relating to the adoption of 24 standard meridians, running from the prime meridian westerly:

"The author of the proposition thus intends that all clocks and watches of the world shall be regulated by sections, of which there are to be twenty-four; that in each of these sections they shall show uniform time, based upon the standard meridian of that section, and not dependent upon the solar local time which will agree with the face of the watches only at the places through which the sectional standard meridian passes. In my opinion there are very serious objections to such an arrangement, which would upset completely all the time relations to which every one is accustomed. Noon, now constituted by a natural phenomenon—the passage of the sun through the meridian of the place—would be arbitrarily changed for a great number of places as much as an hour. The farmer is accustomed to regulate his watch by the sun, and has his marks for it; if the propositions are adopted, he cannot longer do so, unless he knows exactly the difference of longitude in the time between his farm and the sectional standard meridian, and is able to apply it. The traveler between two standard meridians will have to set his watch an hour ahead or back when he crosses this middle line between the two meridians. It will be difficult to define this middle line. If established, a house cut by it may then have an hour's legal difference of time in two rooms. When a crime is committed near the middle line, two witnesses may swear conscientiously regarding identical occurrences to times differing an hour."

Mr. Knorr's plan is to "adopt Greenwich time in addition to the astronomical local time at present used." He proposes to make it convenient for everybody to carry both by means of a device which he illustrates by diagrams, and which, he says, can be readily attached to the ordinary dials of watches and clocks, and adjusted to any required place by a time-map which he also embodies in his paper. He further proposes:

"1. That the running railway service throughout a continent be conducted by one and the same standard time (Greenwich mean time) to be controlled once daily through telegraphic time signals from a central observatory to all main stations.

"2. That clocks be kept at all stations (main as well as way stations) showing in the above-described manner the standard time and in addition the local time of the place, the clocks of the way stations to be controlled carefully by the conductors on their routes between the main stations.

"3. That maps of the above description be posted at every station and in every car, and be printed with the advertised way schedules, so that the public may find everywhere the means for adjusting their watches to the standard time and to any local time selected.

"4. That the way schedules be given in standard and in local time, until the public has become accustomed to the former.

"5. That the telegraph corporations adopt the same measure, and that they cause the recording on all telegrams of the standard and local time at which they have been received for transmission, and at which they have arrived at the place of destination, so that any delay can be detected at once.

"There can hardly be a doubt that all persons who travel much by rail will, after the introduction of the proposed measures by all railroad corporations, soon apply to their watches these trifling changes, in order to carry the standard time of the railroads in addition to the local time of their residence."

A Triple Wreck.

A despatch from Hannibal, Mo., thus describes an accident which happened on the Hannibal & St. Joseph road at Shelbina, Mo., on the night of Oct. 11: "The two regular freight trains which pass each other at Shelbina were standing on the same track facing each other at the time when the west-bound passenger train was expected to appear and a brakeman was sent back to flag it, which he did. The air-brakes of the rear six cars had not been coupled at Palmyra, and when the signal was given of course failed to work. The train, which was behind time, had been running at a high rate of speed, and notwithstanding the fact that the engineer reversed his engine its terrific force had scarcely been lessened before it struck the caboose of the west-bound freight train, lifting it completely on top of the passenger engine cab. Three cars were smashed into fragments, and the west-bound freight engine was propelled forward with great velocity against the one facing it, only a short distance further along the track. The engineers and firemen of all three engines jumped for their lives, and succeeded in escaping uninjured. The scene of the wreck was a fearful one. Piled one on top of another were a dozen freight cars, one of the passenger coaches and two engines being hidden almost from sight. The passengers were thrown violently forward against the seats in front by the shock of the first collision, but none were seriously injured. One of the firemen had his leg broken in jumping from the engine. The locomotives were battered out of shape entirely and will be an almost total loss."

The Mason Double-Bogie Locomotive.

The Bethlehem Iron Co., in Pennsylvania, has had one of these engines in use about its works for some time. The engine has six 4-ft. driving wheels, which have a weight on them of about 78,000 lbs. The cylinders are 17 by 24 in. This engine recently pulled a train of which the Secretary gives the following figures. It consisted of:

	Net tons.
17 eight-wheel cars of coke, av. load 17½ net tons	297.50
61 four-wheel cars of coal, av. load 5½ gross tons	375.76
163 four-wheel cars of iron ore, av. load 3 gross tons	912.80
Total load	1,586.06
Weight of cars, taking coke cars at 8 tons and coal cars at 3 tons each	808.00
Total, cars and load	2,394.06

This is equivalent to 2,137.55 gross tons. The total number of cars was 241, or, if the eight-wheel cars are rated at two four-wheel cars each, 258 cars.

"The train," he says further, "was pulled out of a siding, part of which is straight, and part a 6 degree curve. The grade is level. The distance traveled was about one mile, as it was for the purpose of shifting some cars from the rear end of the train. The locomotive was running backwards at the time, and made the pull with the greatest ease.

"We cannot give you the amount of coal used as we kept no account of it.

"Steam pressure 135 pounds. The engine steams very freely, and in every way gives the greatest satisfaction."

Taking the resistance of this train at 6½ lbs. per net ton (of 2,000 lbs), we would have a total resistance of 15,565 lbs. so that the engine must have had an adhesion of almost exactly one-fifth of the weight on the driving wheels.

Whistling.

On the subject of railway whistling, the *Lancet* says: "We quite agree that there is far too much whistling on railways; but it is not true, as stated in a paper read by Mr. Price Edwards, before the British Association, that 'a low note would be equally efficacious for railway purposes as a high one,' because 'given the same initial intensity in the production of two sounds—one of low, the other of high pitch—there would be little difference between their penetrating powers at long distances and none at all at such distances as sounds are required to be heard for the purposes of signalling.' There is some begging of the acoustic question in the way the proposition is stated; but setting that aside, it is notorious and capable of demonstration, that a flat note does not penetrate so well as a full one of the same pitch; and all sounds have a tendency to fall flat as well as to be less distinctly heard as they traverse space. In other words, the trajectory of a sound-wave falls flatter as it is prolonged. It follows that a low sound which has naturally a low trajectory will become flat sooner than a high one. If whistles are to be heard—and it is essential they should be—at great distances, they must be high-pitched. Meanwhile, public health and happiness demand that there should be as little use of the railway whistle as possible."

A Caution.

Mr. George Hackney, Superintendent of the Locomotive and Car departments of the Atchison, Topeka & Santa Fe road, desires to say that several forged letters purporting to come from his office have lately been presented, and he therefore gives notice to heads of mechanical departments that he gives no letters of recommendation to engineers and firemen, but will answer all communications from other roads relative to the conduct of such employés while on his road.

English Exhibition of Railroad Couplings.

The Railway Couplings Exhibition at Darlington, which opened on Tuesday, the 3d inst., was closed on Saturday. Although financially the exhibition will entail some loss on the Amalgamated Railway Servants' Society, it is felt that a great end has been gained in bringing together such a variety of railway coupling appliances, automatic and otherwise, from different parts of the world to a railway centre. Trials have been made and awards given by competent judges. The object of the exhibition was to give railway officials an opportunity of studying the different new methods of coupling, with a view to their adoption for the purpose of saving life. One point elicited by the exhibition is that the dangerous method of coupling in use in this country has been almost, if not entirely, superseded on American railways.—*London Engineer.*

American railroad men will be very glad to hear that dangerous methods of coupling have been superseded on American roads. It will be news to most of them.

OLD AND NEW ROADS.

Buffalo, Pittsburgh & Western—Buffalo, New York & Philadelphia.—The syndicate which about eighteen months ago purchased controlling interests in the Buffalo, Pittsburgh & Western and the Buffalo, New York & Philadelphia Railroad companies, subsequently acquiring also the New Castle & Franklin and the New Castle, Plain Grove & ButlerRail road charters, is gradually preparing for the consolidation of all these interests under one corporate management, as is advisable both for economy of expenditure and facility of communication of traffic. The New Castle & Franklin, now the Oil City & Chicago road, has secured a link connecting it with the Buffalo, Pittsburgh & Western's main line at Oil City by obtaining the use of the Lake Shore's Franklin Branch. It is proposed to extend the Oil City & Chicago road into the rich coal fields of Butler county under the New Castle, Plain Grove & Butler charter, by building about 30 miles of new track; to connect the Salamanca terminus of the Buffalo, Pittsburgh & Western with the Buffalo, New York & Philadelphia by building 21 miles of track from Salamanca to Olean; and to complete in a few weeks the Rochester Extension of the line now reaching Salamanca. Thus the system will be able to carry all the coal tonnage which it controls to both Buffalo and Rochester. For these purposes the syndicate announces that after the consolidation of the Oil City & Chicago with the Buffalo, Pittsburgh & Western, 9,600 common and 6,400 preferred shares of the new company will be issued, par value $50 each; also 3,600 common and 2,400 preferred shares of the Olean & Salamanca Railroad Company, par value $100 each; and $1,600,000 first mortgage 6s of the Buffalo, Pittsburgh & Western, and $1,200,000 first mortgage 6s of the Buffalo, New York & Philadelphia. Stockholders of either company can subscribe for these securities to the extent of 25 per cent. of the par value of their present holdings, receiving for each $1,000 paid a $1,000 bond, $300 in common and $200 in preferred stock of the new issues respectively.

Carson & Colorado.—Surveys are to be made for the extension of this road west by south to a junction with the Southern Pacific near Mohave, Cal. The line will run through several mining districts of considerable importance.

Chicago & Alton.—This company has issued the following circular:

"In response to the circular of the President, under date of Sept. 9, 1882, the written consent of stockholders owning more than three-fourths of the shares of capital stock of the Chicago & Alton Railroad Company has been received. Shares of the common stock have been offered for sale at par to each stockholder owning preferred or common stock who shall appear as such of record on the books of the company on Nov. 15, 1882, in the proportion of one share to each 10 shares of stock recorded in the names of such stockholders respectively at the close of business on that day, less fractions, if any. Payment of $100 for each share of stock must be made to Messrs. Jesup, Paton & Co., financial agents, at No. 52 William street, New York city, who will receive such payments and be prepared to deliver certificates for the stock in the usual course of business from Dec. 1 to Dec. 15, 1882, but no discount will be allowed on payments made earlier than is required by the company. No stock will be sold to a stockholder owning less than ten shares, and no allotment will be made for fractions. All shares not paid for on or before Dec. 15, 1882, will be retained by the company or disposed of for its benefit, as the board of directors may hereafter decide."

The stock is now quoted at about 140, so that the privilege is a valuable one.

Chicago Belt.—It is reported that the Chicago Belt road project, and the East Chicago land scheme, which was connected with it, have been abandoned, the difficulties in the way being too great and the amount of capital required too large.

Chicago & Eastern Illinois.—On the rehearing of the appeal from the decision of the Circuit Court in the Chicago, Danville & Vincennes foreclosure case, the United States Supreme Court has decided that the case is governed by the same principles as in the former decisions, and has remanded the case to the Circuit Court for further equitable proceedings.

Chicago & Grand Trunk.—This company gives notice that all passenger and freight business exchanged with the Chicago, Rock Island & Pacific road will hereafter be transferred at Blue Island Junction, 20 miles south of Chicago. Baggage must be checked and freight billed by Blue Island Junction, instead of Chicago. Transfer station has been built at that point.

Chicago, Milwaukee & St. Paul.—A new branch has been opened from Northfield, Minn., on the Iowa & Minnesota Division, east to Cannon Falls, 15 miles.

Chicago & Western Indiana.—The Chicago *Tribune* says of the sale of this road: "Mr. J. B. Brown, the originator and controlling spirit of the Western Indiana Railroad and Belt-Line enterprise, has sold out his stock—a controlling interest—to the corporations now coming into the city over the Western Indiana, and he will, of course, retire from the presidency of the company. The roads which thus become the owners of the Western Indiana are the Grand Trunk, the Chicago & Eastern Illinois, the Wabash, St Louis & Pacific, the Chicago & Atlantic, and the Louisville, New Albany & Chicago. The arrangement was consummated at a meeting held in New York yesterday. The reasons assigned for the change in the management of the Western Indiana are that the various lines coming into the city over it have long been desirous to control the property themselves, believing that they can guard their various interests better under such an arrangement. Mr. Brown being offered a good price for his interest, and being desirous to oblige the various roads using the Western Indiana, willingly parted with his stock in the road, and the arrangement is said to be highly satisfactory to him. Mr. Brown is at present in the East, and consequently he could not be interviewed regarding the matter, but it is stated by the officers of the company in the city that they understand that the road is to be managed like the St. Charles Air Line—the general managers of the various roads interested forming a board of management. The Belt-Line will probably be organized and run as a separate institution, though owned by by same parties who own the new line.

"It is not yet known who will succeed Mr. Brown as President of the Western Indiana. It is rumored that it will be Mr. Andrew Crawford, at present Vice-President of the company."

Cincinnati & Eastern.—Tracklaying is now in progress on the Fayetteville Branch, from Sardinia, O., north by east to Fayetteville.

Cincinnati, Green River & Nashville.—About 36 miles have been graded on the extension of this road from Grove City, Tenn., west to Nashville, and work is progressing steadily. The distance is 132 miles. The road is in operation from Grove City east eight miles to King's Mountain on the Cincinnati Southern.

Cincinnati, Wabash & Michigan.—Track on the new extension of this road is now laid to Benton Harbor, Mich., the northern terminus. This is 13 miles beyond the point last noted, and 44 miles from the old terminus at Elkhart, making the road 165 miles long, from Benton Harbor to Anderson, Ind. The stations on the new part of the line, with the distances from Elkhart are: Granger, Ind., 10; Niles, Mich., 20; Berrien Centre, 29; Benton Harbor, 44 miles.

Cleveland, Delphos & St. Louis.—Track is now laid to Mt. Blanchard, O., 12 miles eastward from the late terminus at Bluffton, and 42 miles from the starting point at Delphos. No work has been done east of Mt. Blanchard.

Dardanelle & Waldron.—This company has filed

articles of incorporation for a railroad from Dardanelle, Ark., to Waldron, a distance of 75 miles.

East Tennessee, Virginia & Georgia.—Notice is given that first-mortgage and income bonds of this company will be ready for delivery to holders of certificates issued for the construction of the Cincinnati & Georgia Railroad, now completed, on and after Oct. 26, at the Metropolitan National Bank, New York.

First-mortgage 5 per cent. bonds will be issued, coupon ($25), due Jan. 1, 1883, attached. Three months' interest, equaling $12.50 upon each bond, will be required in cash on delivery of the bonds.

Galesburg & Northern.—This company has filed articles of incorporation for a railroad from Galesburg, Ill., north by east to Geneseo, about 40 miles. Surveys of the line are to be made at once

Hingham, Brockton & Stoughton.—This company is to be organized to build a railroad from Stoughton, Mass., by Brocton, Abington, North Abington and Rockland, to some point on the Old Colony road in Hingham.

Illinois Central.—Track is now laid on this company's Coal Branch, and regular trains will run in a few days. It extends from Buckingham, Ill., on the Middle Division, northward to Essex, nine miles. At Essex the Sangamon Coal Company has opened several shafts and has contracted with this company to carry 100 car-loads of coal a day after Jan. 1 next.

Indianapolis & Vincennes.—Surveys are being made for another branch, to run from Bicknell, Ind., south about 10 miles to Washington, through the Knox County coal field.

Jacksonville, Tampa & Key West.—Grading is now in progress on this road from Jacksonville, Fla., and the company claims to have enough money subscribed to complete the road from Jacksonville to Palatka and on the southwestern end from Tampa to Ft. Meade.

Kansas City, Ft. Scott & Gulf.—The narrow-gauge branch from Weir City, Kan., to Cherryvale, 40 miles, has been changed from 3 ft. to standard gauge, to conform with the rest of the company's lines.

Kentucky & South Atlantic.—A mortgage has been executed and recorded on this road, to secure an issue of $3,000,000 bonds. The road is now in operation from Mt. Sterling, Ky., east to Frenchburg Junction, 23 miles, and the new bonds are intended to pay for its extension east to the West Virginia line, about 80 miles, and to build several coal branches.

Longmont, Middle Park & Pacific.—This projected line is from Longmont, Col., west through the mining regions of Colorado to Salt Lake, Utah, and thence into Idaho and Washington. The company hopes to begin work next year on the first division of 75 miles, from Longmont to Hot Sulphur Springs.

Manhattan Elevated.—The *Elevated Railway Journal* says: "The corrected traffic figures of the Manhattan Railway Company for the 12 months ending Sept. 30 show that during the year 86,361,029 paying passengers were carried over the line. This gives a monthly average of 7,196,769 and a weekly average of 1,660,789. Divide the year's traffic by days, and we have 237,253, which, if all the lines were operated continuously, day and night, would give an hourly average throughout the year of 9,869. But the lines are not all operated continuously, two of the four being closed at night and on Sundays; and then, too, the elevated roads have their dull seasons and their busy ones, just as surface roads have. This is well illustrated in the reports for May and July. In the former month 7,920,875 passengers were carried, while in the latter there were but 6,637,137, a falling off of 1,283,738. Again, although the daily average for the year was 237,253, the days' traffic taken separately differ as widely as that of months. The heaviest travel of a single day within the year just closed was on April 11, when the report shows 319,138. On Dec. 31, 304,183 passengers were carried, on May 30, 296,808, and on Dec. 23, 296,560.

"But the distribution of the travel throughout the 24 hours of the day is of course still more uneven. As we have said, two of the four lines are closed at night (from 8 p.m. to 5:30 a.m.), and the two that are kept open have but few passengers after midnight. There are three hours in the morning and three in the evening known as commission hours, when the fare is but five cents, and in these six hours 65 per cent of the entire traffic is handled. Taking the daily average, then, as a basis of calculation, and dividing it according to this percentage, we have 154,212 as the average per diem for the six commission hours, or nearly 26,000 an hour, and if we had any means of ascertaining the exact traffic per hour, the results would show an average for the hours between 6:30 and 7:30 a. m., and 5:30 and 6:30 p. m. fully double this. We know that these figures must strike many of our own citizens, even, as fabulous, but they are compiled from the daily traffic slips of the company, and these are made up from the actual number of tickets collected from the canceling boxes.

"The year's travel, divided by the mileage of the entire system, shows an average number of passengers per mile of 2,698,782 for the 12 months, a monthly average travel per mile of 258,232, and a daily average of 8,608. This, of course, was as unequally distributed as the hourly travel, but we have no means of computing it further. The traffic of the roads for the preceding year, which closed Sept. 30, 1881, was 75,575,245, and for the twelve months ending on the corresponding date, 1880, 60,831,759. The travel of the year just closed exceeds that of its immediate predecessor by 10,785,784, and that of 1880 by 26,529,270 passengers."

Marietta & Cincinnati.—A dispatch from Chillicothe, O., Oct. 23, says: "The hearing of the suit for the foreclosure and sale of the Marietta & Cincinnati Railroad, as reorganized, came up in the Ross County Common Pleas this forenoon. Owing to the large interests involved, Judge Minshall, who is presiding at the present term of the Court, called on Judges Huggins and Gregg of this circuit to sit with him. Among those present were Colonel Orland Smith, of Columbus, Trustee for the first-mortgage bondholders; Receivers J. H. Stewart and Samuel Woodward, operating the road under order of the Court; Mr. John Madeira, of Chillicothe, Trustee for the second-mortgage bondholders.

"The only attorneys opposing the decree and sale are Mr. William Disney, representing the city of Cincinnati, and Mr. S. R. Matthews, representing the ancient Hillsboro & Cincinnati bonds, on a portion of the line now merged in the main line.

"Mr. S. S. Cooke, the special Master Commissioner appointed as special term in August last, first made his report to the Court. In this Mr. Cooke says he went to New York, and accompanied by a member of the Reorganization Committee went to the offices of the Farmers' Loan & Trust Company, and first made a cursory examination of the stock and securities. From this he decided that he would count the same, which he did. The counting of the securities went on day after day for a long time, and on Oct. 2 testimony was taken. This consisted of the sworn statements of bankers and brokers who had acted as agents for the collection of the bonds, as well as of the officers of the Farmers' Loan & Trust Company of New York. The substance of Mr. Cooke's report is that the affidavit of the President of the Trust Company as offered in evidence at the special term in August was correct and true, and that the number and value of securities pledged to the reorganization is sufficient to meet the requirements of the law.

"Mr. Matthews moved first to strike the report of the Special Master from the files, on the ground mainly that he had not taken the testimony submitted in the form required by law. The motion was overruled and the ruling was excepted to by Mr. Matthews, who also filed his exceptions to the subject matter of the report.

"The amount of principal and interest due on the several mortgages, up to Oct. 16, the first day of this term, is as follows:

First mortgage	$1,458,293.37
Second mortgage	1,130,880.60
Third mortgage	5,785,113.37
Fourth mortgage	7,881,288.60

"The greater part of the day was taken up in reading the voluminous report of the Master. The decree for the sale is already drawn up in the form sought by those who are pressing for the sale, who hope for better success than they had at the special term."

On the following day the Court entered an order granting the decree of foreclosure and sale.

Massachusetts Central.—At the annual meeting in Boston, Oct. 25, a report was submitted by the Treasurer, which states: "It appears from the books of the company that on Sept. 30, 1882, $6,705,063.76 had been expended in the construction of the railroad; $94,565.50 for interest and $178,666.67 for discount on bonds; that the capital stock of $3,500,000 has been paid in, and that bonds to the same amount have been issued. There has been a default made upon the $105,000 of coupons due July 1, 1882, and a small portion of these due last January is also unpaid. The floating debt of the company amounts to $51,879.68, and in addition to this there are debts arising from the operation of the railroad, which, if assumed by the company, will make the entire amount of the floating debt $77,479.68." There was a loss of $54,635.40 from the opening of the road Oct. 1, 1881, to Aug. 1, 1882, and from the latter date to Sept. 30, 1882, the receipts were $18,988.18 and the expenditures $19,241.84.

President Aldrich stated that many of the heaviest bondholders did not favor a foreclosure, as has been threatened, for it meant serious loss to them. Every one admitted that there was no money in the road until it is completed to Northampton, to effect which a large sum is needed. There would be no difficulty in bonding the new portion of the road. The first thing to do was to pay the employés. This could probably be done very soon. The directors believed it to be the best policy to keep the road in operation, even at a small loss, although the stockholders should not be surprised at any time to hear that the road had shut down. Above all things, President Aldrich said, the road should be completed to Northampton. A stockholder suggested, as a temporary expedient, that the New London Northern road, between Belchertown and Amherst, might be used, and that the Ware River road could be made to form another link. The suggestion was favorably received and due consideration was promised it.

A resolution was adopted authorizing the board to appoint a committee with full power to act in relation to plan for the adjustment of the company's affairs.

Milwaukee, Lake Shore & Western.—Track is now laid on the new branch from Monico, Wis., west to Pelican Rapids on the Wisconsin River, 15 miles. Trains will be put on as soon as the necessary buildings can be erected. Grading is finished from Monico north into the pine forest eight miles, and the company expects to finish and lay track on 15 miles this year.

Montreal & Sorel.—This road has been leased to the Southeastern Railway Company, of Canada, for 21 years, the rental to be 40 per cent. of gross earnings. The lease provides for the extension of the road from Sorel, P. Q., to Levis, and from St. Lambert to Rouses Point and Dundee.

Nashville, Chattanooga & St. Louis.—This company's statement for September and the three months of its fiscal year, from July 1 to Sept. 30, is as follows:

	Sept.	Three months.
Earnings	$168,999	$498,294
Expenses	100,442	294,159
Net earnings	$ 68,557	$204,135
Interest and taxes		139,091
Surplus		$ 65,044

For the three months there was a decrease in earnings of $432, or 0.1 per cent.; a decrease in expenses of $8,669, or 2.8 per cent., and an increase in net earnings of $8,137, or 4.2 per cent.

New Brunswick.—This company has decided to begin work on the extension of its road from Edmunston, N.B., to the St. Lawrence, near Riviere du Loup. The line adopted is that of the Ruel survey, made several years ago, by the Madawaska settlements and Lake Temiscouata. It runs through a heavy timbered region, a large part of which is uninhabited.

New York Central & Hudson River.—The Grand Jury has been investigating the Fourth avenue tunnel accident, and has found indictments for manslaughter against Rawson, the telegraph operator at Ninety-sixth street, and Rood, the conductor of the New Haven train.

New York, Chicago & St. Louis.—Regular passenger trains began to run over this road Oct. 23. No through trains are yet run, the trains put on being local between Buffalo and Cleveland and between Chicago and Cleveland. The date of the opening of the road for through travel has not yet been fixed

A Chicago dispatch reports that the through trains of this road will use the Lehigh Valley route between New York and Buffalo, an agreement having been made to that effect.

New York & New England.—The transfer of the section of the Woonsocket Division from Brookline to Needham to the Boston & Albany Company will probably soon be completed. Commissioner Fink, to whom as arbitrator the question of price was left, recently made a careful examination of the road, and will soon give his decision.

Niagara Falls & Suspension Bridge.—This company has been organized to build a road from Suspension Bridge, N. Y., to the village of Niagara Falls.

Northern Pacific.—The great bridge over the Missouri at Bismarck, Dak., has been completed and tested, and trains are running over it, thus doing away with the troublesome and expensive ferry transfer at that point.

Olean & Salamanca.—This company has filed articles of incorporation to build a branch from the Buffalo, Pittsburgh & Western road at Salamanca, N. Y., east by south to Buffalo, New York & Philadelphia at Olean. The distance is 18 miles, and the line is parallel to the Erie tracks.

Ouachita & Choctaw.—This company has filed articles of incorporation to build a railroad from Camden, Ark., northwest 100 miles to the Indian Territory line.

Pensacola & Atlantic.—Track is now laid from the Apalachicola River west 21 miles. Work at Pensacola has been stopped by the yellow fever there, but outside of the infected district it has not been delayed. The company hopes to have the road completed by the end of the year.

Pennsylvania, Slatington & New England.—This company has filed articles of incorporation in New York to cover the extension of its road from the New Jersey state line to Pine Island, N. Y., the terminus of a branch of the Erie. The distance is about five miles.

Philadelphia & Reading.—The Receivers' statement for September and the ten months of the fiscal year from Dec. 1 to Sept. 30 is as follows:

	—September.— Gross.	Net.	Ten months, net.
Railroad traffic	$1,846,763	$923,872	$7,248,273
Canal traffic	121,612	68,146	193,938
Steam colliers	44,856	8,051	203,734
Richmond barges	5,780	614	*14,996
Total R. R. Co	$2,019,017	$1,000,683	$7,630,949
Coal & Iron Co.	1,469,315	88,148	749,103
Total	$3,488,332	$1,088,831	$8,380,052
Net earnings, 1881:			
Railroad Co		$987,089	$7,238,848
Coal & Iron Co		141,730	824,829
Total		$1,128,819	$8,063,677

* Loss.

The expenses do not include interest or rentals, the net earnings being the amount from which those charges are to be paid.

The total net decrease for the month was $39,988, or 3.6 per cent.; total net increase for the ten months, $316,375, or 3.9 per cent.

Pittsburgh Junction.—This company has placed its entire issue of bonds, $1,440,000 in amount, the Baltimore & Ohio Company taking one-half, and Drexel, Morgan & Co., of New York, the other half. Work on the road around Pittsburgh will be pushed.

Pittsburgh, McKeesport & Youghiogheny.—The Pittsburgh *Telegraph* of Oct. 24 says: "The negotiations for the sale of the Yough. branch of the Baltimore & Ohio to the Pittsburgh, McKeesport & Youghiogheny were concluded yesterday, and Emile Low, engineer, took charge of the line. The price paid was $300,000, more than double what it cost, but probably not more than it is worth. A branch from the Summit to Broadford is being constructed by the H. C. Frick Coke Company."

The branch referred to runs from Mt. Pleasant, Pa., to Broadford, 10 miles. It was, some years ago, the occasion of a very sharp fight between the Baltimore & Ohio and the Pennsylvania.

Sabine & East Texas.—This road is now completed to Sabine Pass, Tex., 14 miles southward from the old terminus at Taylor's Bayou, and 30 miles from Beaumont. The road is now 105 miles long, from Sabine Pass to Rockland on the Neches River. It is controlled by the Texas & New Orleans Company.

Securities on the New York Stock Exchange.—The following securities have been put on the lists at the New York Stock Exchange:

Chicago & Northwestern, $1,830,000 additional sinking fund 5s of 1879, Nos. 3,506 to 5,335; $720,000 Escanaba & Lake Superior first mortgage bonds; $600,000 Des Moines Division first-mortgage bonds.

Columbus, Hocking Valley & Toledo, $10,300,000 stock and $14,500,000 first-consolidated bonds.

Denver & Rio Grande, $1,020,000 additional consolidated bonds, Nos. 12,393 to 13,412.

East Tennessee, Virginia & Georgia, $3,930,000 additional consolidated 5s, Nos. 10,992 to 14,912.

Mexican Central, $16,704,000 first-mortgage 7 per cent. bonds.

Northern Pacific, $11,987,000 additional general mortgage bonds, Nos. 20,001 to 31,987.

Tennessee, Iron Mountain & North Carolina.—This company has been organized to build a railroad from Jonesboro, Tenn., on the East Tennessee, Virginia & Georgia road, southeast by Erwin and Limestone Cave to the North Carolina line. The distance is about 18 miles.

Texas & St. Louis.—Track is now laid to Gatesville, Tex., 38 miles west by north from Waco, and 296 miles from Texarkana.

On the Arkansas Division regular trains now run from Bird's Point (Cairo), Mo., to Jonesboro, Ark., 125 miles; from Rob Roy to Camden, 76 miles, and from Garland to Texarkana, 22 miles.

Toledo & Indianapolis.—Work has been for some time in progress on this road, and grading is now reported finished from Toledo, O., southward to the New York, Chicago & St. Louis crossing north of Findlay. Track has been laid for 12 miles from Toledo.

Utica, Ithaca & Elmira.—Last week an order was obtained from a judge of the New York Supreme Court relieving Receiver Chamberlain, and turning over the road to the representatives of the bondholders. Before this order could be served, however, a stay of proceedings was obtained from another judge, and Receiver Chamberlain remains in possession of the road.

Union Pacific.—On the extension of the Colorado Central narrow gauge line from Georgetown, Col., to Leadville, which is known as the High Line, track is now laid from Georgetown to Bakerville, 8½ miles. Work is being pushed as fast as the difficult nature of the country will permit. The distance from Denver to Leadville by this line will be 125 miles, or 47 miles less than the shortest line now in use.

Vermont & Canada.—At the annual meeting in Bellows Falls, Vt., last week, a resolution was passed looking towards a compromise with the Central Vermont Company, by reducing the amount of stock and accepting 5 per cent. dividends thereon, instead of 8 per cent. as required by the lease. No rental at all has been paid for nearly ten years past.

Williamsport & Clearfield.—This company has filed a mortgage for $3,000,000 to the Farmers' Loan & Trust Company of New York, in the recorder's office of Clinton County, Pa. The road is to run from the mouth of Beech Creek to a point near Cato, Pa., 25 miles, on which the first $1,500,000 will be issued. The second will be reserved for issue till the road is consolidated with the Cato & Beech Creek road.